UNIVERSIDADE DE LISBOA

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Marine spatial planning in Portugal: an ocean policy analysis

Doutoramento em Ciências do Mar

Catarina Frazão da Fonseca Ribeiro dos Santos

Tese orientada por:
Michael K. Orbach
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Documento especialmente elaborado para a obtenção do grau de doutor

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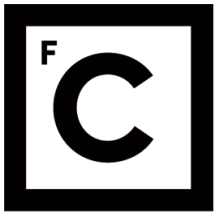

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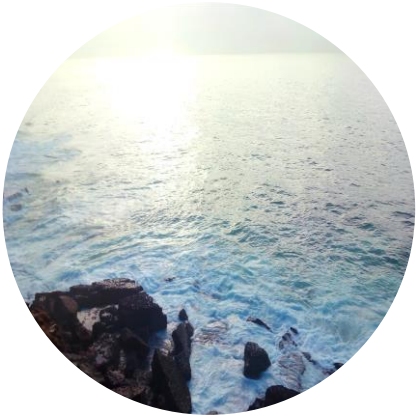
For my parents, who allowed everything



The pessimist complains about the wind. The optimist expects it to change. The realist adjusts the sails.

William Arthur Ward

Alice: This is impossible.

The Mad Hatter: Only if you believe it is.

Lewis Carroll

Contents

Abstract

Planning of marine areas, from coastal to open-ocean regions, has been developed worldwide as a way to ensure sustainability and reduce conflict in ocean's use. Marine spatial planning (MSP) deals with the distribution of human uses in the ocean, both spatially and temporally, striving to minimize conflicts and foster compatibilities among such uses, and between uses and the environment. An important aspect of MSP is that it takes the ecosystem-based management (EBM) approach as its overarching principle, therefore putting an emphasis in allowing for socioeconomic development without compromising the use of resources by future generations. Being one of the world's largest maritime nations, Portugal has an important role in the implementation of the European Union (EU) maritime policies. The perceived need to develop sustainable ocean planning and management processes in Portugal has increased in the last decade. Accordingly, during this period two national ocean strategies were developed, the transposition and implementation of the EU Marine Strategy was pursued, and the first Portuguese MSP initiative was started. The Portuguese MSP process can be considered to have two main phases. The first one is the the *Plano de Ordenamento do Espaço Marítimo* (POEM) phase, which extended over a period of four years (2008-2012). During most of that period the POEM was intended to be the first Portuguese "marine spatial plan", but in the end it was instead published as a "study", thus having no legal or regulatory formal aspect. The second phase is the MSP legislation phase, which started immediately after the release of the POEM with the development of a MSP framework law. This law was promulgated in early 2014 (Law No. 17/2014), and one year later a set of MSP complementary regulations that aimed both to implement the law and to transpose the EU MSP Directive were approved as well (Decree-Law No. 38/2015). Given that the present and future of Portuguese ocean management are currently being defined, understanding how the Portuguese MSP process was conducted so far, together with understanding major opportunities and threats to its long-term adequacy and success, is a challenge of the utmost relevance, and the topic of this dissertation. Three main research questions therefore arose: (i) *How can MSP contribute to ensure sustainable ocean management, one that ensures resilient and healthy marine ecosystems?* (ii) *To what extent is the Portuguese MSP process being developed in accordance with international recommendations towards sustainable MSP?* (iii) *What are the major challenges for the future of Portuguese ocean planning and management?*

Key-words

Marine spatial planning · Ocean policy · Sustainability · Portugal

Resumo

O ordenamento do espaço marítimo (OEM), enquanto processo que incide sobre a distribuição espacial e temporal de actividades humanas no mar, tem por objectivo minimizar conflitos entre essas mesmas actividades, bem como entre actividades e o ambiente. Por esta razão, o OEM tem vindo a ser desenvolvido a nível mundial como forma de assegurar a sustentabilidade no oceano. Uma característica de extrema importância é o facto de o OEM assumir a abordagem ecossistémica como um dos seus princípios fundamentais. Isto significa que o processo procura colocar um enfoque particular em alcançar o equilíbrio entre permitir o desenvolvimento económico, no entanto sem comprometer o uso de ecossistemas marinhos, e dos serviços que estes providenciam, por gerações futuras. Portugal é uma das maiores nações marítimas a nível mundial, tendo a segunda maior zona económica exclusiva da União Europeia. Por essa razão Portugal tem também um papel relevante na implementação de políticas marítimas europeias. Na última década, a necessidade de desenvolver processos de ordenamento e de gestão do espaço marítimo nacional sustentáveis tornou-se evidente. Em conformidade, nos últimos dez anos Portugal desenvolveu duas Estratégias Nacionais para o Mar, transpôs a Diretiva Quadro Estratégia Marinha para a sua ordem jurídica interna, desenvolveu as Estratégias Marinhas correspondentes e, deu início à sua primeira iniciativa de OEM a nível nacional. O processo de OEM português pode ser dividido em duas fases principais. A primeira corresponde ao desenvolvimento do Plano de Ordenamento do Espaço Marítimo (POEM), que decorreu entre 2008 e 2012. A segunda fase diz respeito ao desenvolvimento de um conjunto de legislação. Esta começou a ser desenvolvida imediatamente após a finalização do POEM, com o desenvolvimento de propostas para uma Lei de Bases de OEM. Após um longo processo de discussão parlamentar, no início de 2014 foi publicada a primeira lei nacional de estabelece as Bases da Política de Ordenamento e de Gestão do Espaço Marítimo Nacional – Lei n.º 17/2014. Um ano mais tarde, foi também publicada a legislação complementar – Decreto-Lei n.º 38/2015 – que não só desenvolve a Lei n.º 17/2014 mas também transpõe para a ordem jurídica nacional a Diretiva europeia que estabelece um quadro para o OEM. Uma vez que os processos de gestão e ordenamento do mar português estão presentemente a sofrer um considerável avanço, proceder à sua análise é de extrema relevância. Neste contexto, três questões principais procurarão ser respondidas: (i) *De que forma é que o OEM pode contribuir para assegurar a sustentabilidade no oceano, garantindo a manutenção de ecossistemas resilientes e saudáveis?* (ii) *Até que ponto é que o processo de OEM português está a ser desenvolvido de acordo com as recomendações internacionais sobre o que deve ser um OEM sustentável?* (iii) *Quais são os maiores desafios futuros para a gestão e ordenamento do espaço marítimo português?*

Palavras-chave

Ordenamento do espaço marítimo · Políticas do mar · Sustentabilidade · Portugal

Resumo alargado

O ordenamento do espaço marítimo (OEM) é um processo que tem vindo a ser desenvolvido a nível mundial, desde zonas costeiras até ao oceano aberto, como forma de assegurar uma gestão sustentável do oceano. De acordo com o guia da UNESCO *Marine spatial planning: a step-by-step approach toward ecosystem-based management*, o OEM pode ser definido como um processo público de análise e distribuição, no tempo e no espaço, das actividades humanas que se desenvolvem no mar, por forma a alcançar objetivos ambientais, económicos e sociais, normalmente especificados através de um processo político. De facto, o OEM procura minimizar conflitos entre as referidas actividades, bem como entre as actividades e o ambiente. Um processo de OEM envolve um número de etapas, começando normalmente com a definição de um conjunto de princípios, metas de longo prazo e objectivos de curto prazo para uma determinada área (etapa 1), à qual se segue uma análise das condições ambientais, socioeconómicas e políticas existentes (etapa 2). Com base em informação proveniente da segunda etapa, são desenvolvidos cenários relativos a condições futuras (etapa 3), bem como definidas e avaliadas alternativas de gestão, e tomadas decisões relativamente à sua selecção (etapa 4). Uma vez selecionada a alternativa de gestão é desenvolvido um plano de ordenamento para a área marítima considerada (etapa 5). O plano desenvolvido é implementado (etapa 6), e os resultados da sua implementação são monitorizados e avaliados (etapa 7). Com base nestes mesmos resultados, tanto o plano como todo o processo de ordenamento são ser revistos e adaptados (etapa 8). Uma vez que o OEM é um processo público, é fundamental que no decorrer das referidas etapas seja garantido o envolvimento dos actores relevantes, tanto a nível governamental como societal, nomeadamente através processos efectivos de participação pública.

Uma das características do OEM que apresenta uma elevada relevância é o facto de este poder assumir a abordagem ecossistémica (AE) como um dos seus princípios fundamentais. A AE é, de facto, um paradigma estabelecido no que respeita à gestão dos oceanos, paradigma este que se acredita representar a melhor forma de assegurar a sustentabilidade dos ecossistemas marinhos e dos serviços que estes providenciam. O OEM encontra-se também reconhecido como um mecanismo, ou uma abordagem operacional, de suporte à implementação da AE. Esta ênfase na implementação da AE é tanto mais importante uma vez que, presentemente, já não existem áreas marinhas "pristinas". Ao invés, estima-se que cerca de 40% da área dos oceanos se encontre fortemente impactada por pressões antropogénicas. Isto significa que o processo de OEM tem de procurar sempre alcançar um equilíbrio entre desenvolvimento e protecção, permitindo um desenvolvimento económico e social, sem no entanto comprometer o uso de ecossistemas marinhos, e dos serviços que estes providenciam, pelas gerações futuras.

Devido ao seu comprovado potencial para uma gestão sustentável do oceano, o OEM tem vindo a ser cada vez mais desenvolvido a nível mundial. Neste momento encontra-se em desenvolvimento em cerca de cinquenta países e aprovado em cerca de 10% da área das zonas económicas exclusivas (ZEE) de todo o mundo, e as previsões são de que, até 2025, este valor possa aumentar até 50% de todas as ZEE.

Portugal é uma das maiores nações marítimas a nível mundial, tendo a segunda maior ZEE da União Europeia. Por essa razão, Portugal tem também um papel relevante na implementação de políticas marítimas europeias. Na última década a necessidade de desenvolver processos de ordenamento e de gestão do espaço marítimo nacional tornou-se evidente. Em conformidade, nos últimos dez anos Portugal desenvolveu duas Estratégias Nacionais para o Mar, transpôs a Diretiva Quadro Estratégia Marinha (DQEM) para a sua ordem jurídica interna, desenvolveu as Estratégias Marinhas correspondentes e, deu início à sua primeira iniciativa de OEM a nível nacional. Ao contrário de muitos outros países, em que os processos de OEM surgiram como uma resposta a uma necessidade real e imediata de organização de actividades marítimas uma vez que os seus espaços marítimos se encontravam sujeitos a uma elevada pressão antropogénica (tal como acontece no Mar do Norte), em Portugal não existe ainda uma elevada utilização do mar. No entanto, tal como é defendido por especialistas, essa é na verdade a melhor altura para iniciar o desenvolvimento de processos de OEM.

O processo de OEM português pode ser dividido em duas fases principais. A primeira corresponde ao desenvolvimento do Plano de Ordenamento do Espaço Marítimo (POEM), que decorreu entre 2008 e 2012. A segunda fase diz respeito ao desenvolvimento de legislação sobre OEM. Esta última começou a ser desenvolvida imediatamente após a finalização do POEM, com o desenvolvimento de propostas para uma Lei de Bases de OEM. Após um longo processo de discussão parlamentar, no início de 2014 foi publicada a primeira lei nacional relativa às Bases da Política de Ordenamento e de Gestão do Espaço Marítimo Nacional – Lei n.º 17/2014, de 10 de Abril. Um ano mais tarde, foi publicada a sua legislação complementar – Decreto-Lei n.º 38/2015, de 12 de Março – que não só desenvolve a Lei n.º 17/2014 mas transpõe também para a ordem jurídica nacional a Diretiva europeia que estabelece um quadro para o OEM (Directiva 2014/89/UE). Uma vez que os processos de gestão e de ordenamento do espaço marítimo português se encontram, presentemente, a atravessar uma fase de desenvolvimento significativo, proceder à sua análise e discussão é um desafio de elevada importância.

A presente dissertação procura investigar o papel do OEM no alcançar de uma gestão sustentável do oceano, utilizando para isso o contexto português como caso de estudo. Três questões principais procurarão assim ser respondidas: (i) *De que forma é que o OEM pode contribuir para assegurar a sustentabilidade no oceano, garantindo a manutenção de ecossistemas resilientes e saudáveis?* (ii) *Até que ponto é que o processo de OEM português está a ser desenvolvido de acordo com as recomendações internacionais sobre um OEM sustentável?* (iii) *Quais são os maiores desafios futuros para a gestão e ordenamento do espaço marítimo português?*

A dissertação é composta por seis capítulos, três dos quais já se encontram publicados em revistas internacionais sujeitas a revisão por pares – nomeadamente, Capítulos 2, 3 e 4. O Capítulo 1 corresponde à introdução geral, enquanto o Capítulo 6 diz respeito às considerações finais. Assim sendo, os Capítulos 2 a 5 são aqueles que encerram a apresentação, análise e discussão dos resultados da presente dissertação.

O Capítulo 2 tem por objectivo analisar como é que os conceitos de sustentabilidade e de AE têm vindo a ser considerados nos processos de OEM. Para isso realiza-se: (i) uma revisão de como os principais documentos europeus sobre política do mar têm incorporado estes três conceitos (OEM, AE e sustentabilidade); (ii) uma análise dos diferentes conceitos de sustentabilidade que o OEM poderá adoptar, nomeadamente sustentabilidade forte *versus* sustentabilidade fraca; e (iii) uma análise de como a gestão adaptativa poderá solucionar alguns dos desafios identificados.

O Capítulo 3, por sua vez, incide sobre como é que as questões de sustentabilidade são incorporadas no processo de OEM português. Para isso realiza-se: (i) uma breve descrição do processo de OEM em Portugal (desde o POEM até à versão preliminar da Lei n.º 17/2014); (ii) uma análise de como os conceitos de sustentabilidade são tidos em conta em ambos os instrumentos (POEM e Lei de Bases); e (iii) uma discussão dos maiores desafios futuros para o processo de OEM português.

No que diz respeito ao Capítulo 4, o seu principal objectivo é analisar e discutir a legislação complementar (Decreto-Lei n.º 38/2015) que desenvolve a Lei nº 17/2014, nomeadamente no que respeita à forma como esta legislação incorpora questões de sustentabilidade. Para tal, o presente capítulo: (i) analisa os conteúdos do Decreto-Lei no que diz respeito a referências ambientais, comparando os mesmos com os conteúdos da Directiva 2014/89/UE; (ii) analisa a ligação existente entre a implementação da DQEM e a implementação do processo de OEM em Portugal; e (iii) discute os principais desafios que o Decreto-Lei coloca a uma gestão sustentável do oceano.

Por fim, o Capítulo 5 incide sobre a história do processo de OEM português, tendo por objectivo a sua descrição desde o desenvolvimento do POEM até à publicação de legislação sobre OEM. Para cumprir este objectivo o presente capítulo: (i) desenvolve uma etnografia política relativa ao processo de OEM português, baseada numa extensa revisão de literatura bem como num conjunto de entrevistas realizadas a actores-chave do processo; (ii) explora a percepção que os referidos actores-chave têm sobre um conjunto de questões fundamentais relativas ao OEM em Portugal – nomeadamente, (a) o que despoletou o processo de OEM em Portugal, (b) quais as principais vantagens e desvantagens do POEM, (c) quais as principais vantagens e desvantagens da Lei n.º 17/2014, (d) porque é que o POEM foi publicado como um estudo, (e) qual a ligação formal entre o POEM e a Lei n.º 17/2014, (f) qual o papel do ambiente no OEM português, e, finalmente, (g) quais os principais desafios futuros para o OEM em Portugal.

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List of Abbreviations

7-CAM	Agriculture and Sea Committee
AM	Adaptive management
APA, I.P.	Portuguese Environment Agency
ARH	River Basin Administration
ASAE	Portuguese Authority for Economic and Food Safety
BE	Left Block Party
CDS-PP	People's Party
CIAM	Inter-ministerial Commission for Sea Affairs
CIAMA	Interdepartmental Commission for Maritime Affairs of the Azores
CNADS	National Council for Environment and Sustainable Development
CT	POEM's coordination team
DGPM	Directorate General for Maritime Policy
DGRM	Directorate-General for Natural Resources, Safety and Maritime Services
DPM	Public Maritime Domain
EBM	Ecosystem-based management
EC	Ecosystem conservation
EDP	*Energias de Portugal*
EEZ	Exclusive economic zone
EIA	Environmental impact assessment
EMAM	Task Group for Maritime Affairs
EMEPC	Task Group for the Continental Shelf Extension
ENGIZC	National Strategy for Integrated Coastal Zone Management
EU	European Union
EXPO 98	1998 Lisbon World Exposition
GES	Good environmental status
GIS	Geographical information system
GMG	General management guideline
GT-EBGOEMN	Working Group on Marine Planning and Management
ICZM	Integrated coastal zone management
IMP	Integrated Maritime Policy
INAG	Portuguese Water Institute
KN	Knowledge gathering

M@rBis	Marine Biodiversity Information System
MAM	Ministry for Agriculture and Sea
MAMAOT	Ministry for Agriculture, Sea, Environment and Spatial Planning
MAOTE	Ministry for Environment, Spatial Planning and Energy
MPA	Marine protected area
MSFD	Marine Strategy Framework Directive
MSP	Marine spatial planning
MT	POEM's multidisciplinary team
NC	Nature conservation
NGO	Non-governmental organization
NOS	National Ocean Strategy
OCEANO XXI	Association for the Knowledge and Economy of the Sea
PCP	Portuguese Communist Party
PDM	Municipal master plan
PEC	Stability and Growth Programme
PEV	Green Party
POEM	*Plano de Ordenamento do Espaço Marítimo*
POEMA	*Plano de Ordenamento do Espaço Marítimo dos Açores*
POOC	Coastal spatial plan
PROT	Regional spatial plan
PS	Socialist Party
PSD	Social Democratic Party
SCO	Strategic Commission for the Oceans
SEA	Strategic environmental assessment
SM	Supplementary material
SMG	Sectoral management guideline
SUS	Sustainable use of resources
TPEA	Transboundary Planning in the European Atlantic
TUEM	Utilization tax
UNCLOS	United Nations Convention on the Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
WFD	Water Framework Directive

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To my *inner family*, for lighting up my life.

1 General Introduction

to

Marine spatial planning in Portugal: an ocean policy analysis

1.1. Setting the scene

Planning of marine areas, from coastal to open-ocean regions, has been developed worldwide as a way to ensure sustainability and reduce conflict in ocean's use. Marine spatial planning (MSP) – or maritime spatial planning, as it is commonly referred to in Europe – is commonly defined as a "public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process" [1]. In fact, MSP deals with the distribution of human uses in the ocean, both spatially and temporally, striving to minimize conflicts and foster compatibilities among such uses, and between uses and the environment. As a planning process, MSP involves a number of steps that must be implemented to ensure its proper development [1, 2]. In the ideal case it begins with the definition of planning principles, goals and objectives for a management area (step 1 on Figure 1.1), followed by the analysis of present environmental, socioeconomic, and political conditions (step 2). Based on the latter information, scenarios are built to predict and define potential future conditions (step 3), and management alternatives are established and evaluated, and spatially explicit decisions are made (step 4). When a management alternative is selected, a marine spatial plan is then developed (step 5), implemented (step 6) and the results of both the plan and its implementation are monitored and evaluated (step 7). Finally, the plan is revised so that the

entire planning process can be adapted in light of learned lessons (step 8 on Figure 1.1). An aspect that is not described in these steps, but which is cross-cutting to MSP is the need for public participation. Because MSP *is a public process* "the involvement of multiple actors and stakeholders at various governmental and societal levels" [3] and "the participatory development of a plan" [4] must always be ensured.

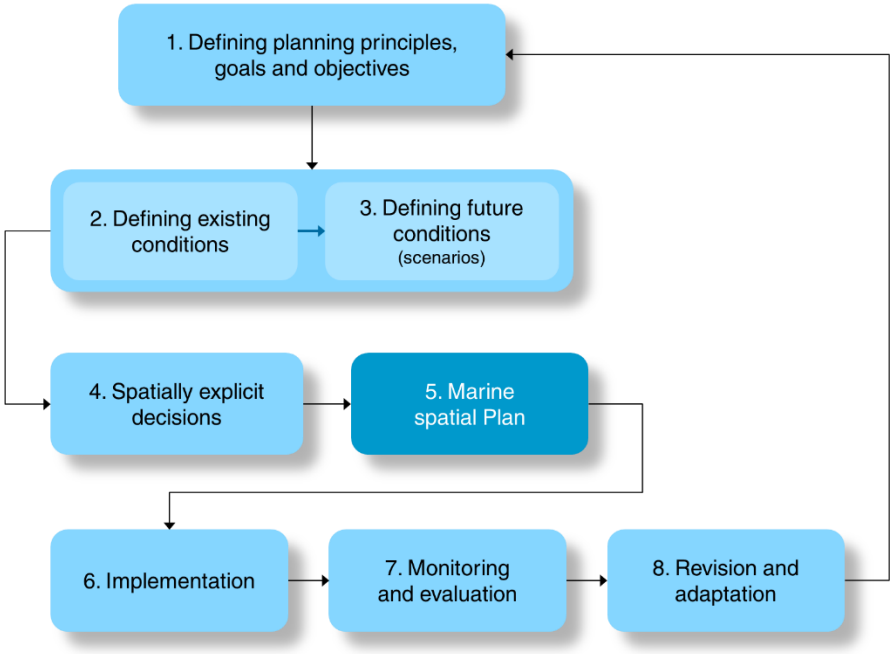

Figure 1.1. Main steps in a full marine spatial planning process, according to information from [5, 6]. The development of a marine spatial plan (step 5) although important is only one of the steps of the process.

An important aspect of MSP is that it takes the ecosystem-based management (EBM) approach as its overarching and underlying principle [4, 5]. EBM is an established paradigms for ocean management which may provide the best means to ensure the long-term sustainability of marine ecosystems and the services they provide [6, 7]. MSP has been long acknowledged as a mechanism, or a practical approach, to support and implement EBM [6]. This emphasis in implementing EBM and in achieving environmental sustainability is more and more important as no area of the world's oceans is unaffected by human activities and their impacts [8]. On the contrary, a large fraction of the ocean – about 40% –seems to actually be strongly affected by anthropogenic pressures [8]. In this context, the planning process must always take into account the biophysical, human and institutional dimensions of a given ecosystem – its "total ecology" [9] – making the necessary trade-offs to ensure a balance

between development and conservation objectives, and therefore allowing for socioeconomic development without compromising the use of resources by future generations.

Due to such potential and relevance for marine management and for the development of corresponding policies, MSP has been developed around the world – for information on national MSP initiatives see [10, 11]. As stated by Ehler [12], "MSP is clearly an idea whose time has come". MSP is currently under development in almost fifty countries, and already approved by government in almost 10% of the area of the world's exclusive economic zones (EEZs) [13] – see Figure 1.2 for a global map on the state of MSP development. Predictions are that it will become more prevalent in the upcoming decade (up to 50% of all EEZs by 2025) [14]. Scientifically, MSP has also been gaining more and more importance. As the number of countries with MSP initiatives increases, and marine spatial plans start to be implemented, monitored and revised, the amount of MSP-related information and expertise naturally tends to increase alongside. As a result, there is an increasing trend in the number of scientific publications on MSP, with a special relevance in the last decade (Figure 1.3).

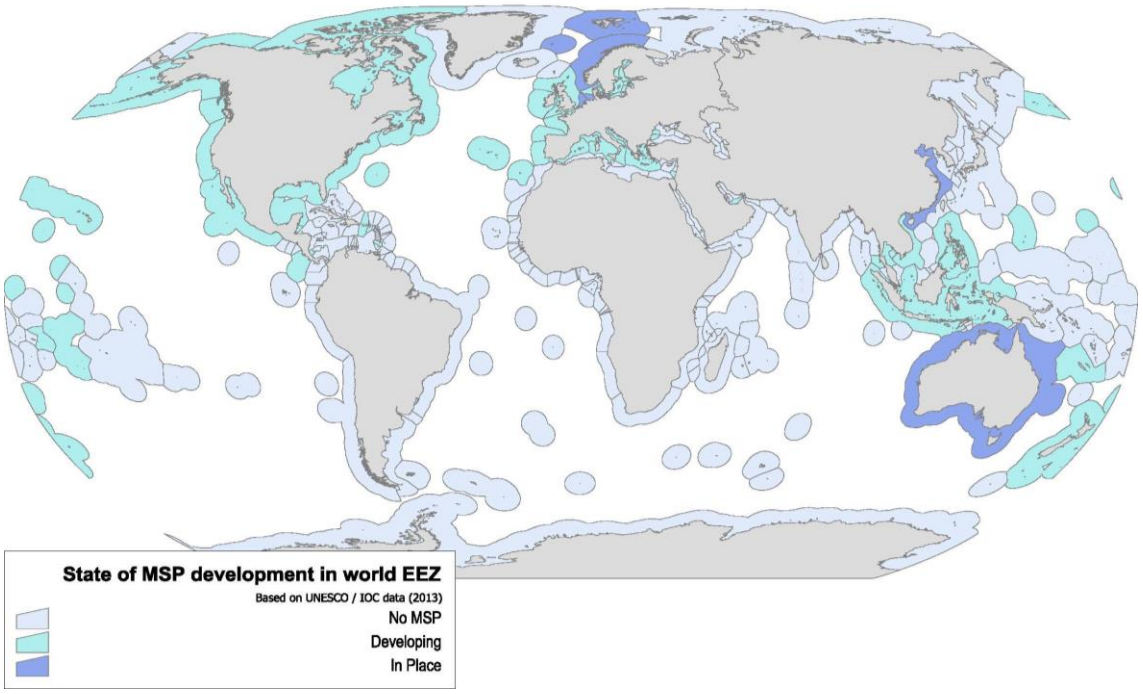

Figure 1.2. Global map of marine spatial planning (MSP) development. This map was developed by Olsen in 2014 based on data from the UNESCO's document *A guide to evaluating marine spatial plans* [15]. EEZ: Exclusive economic zone.

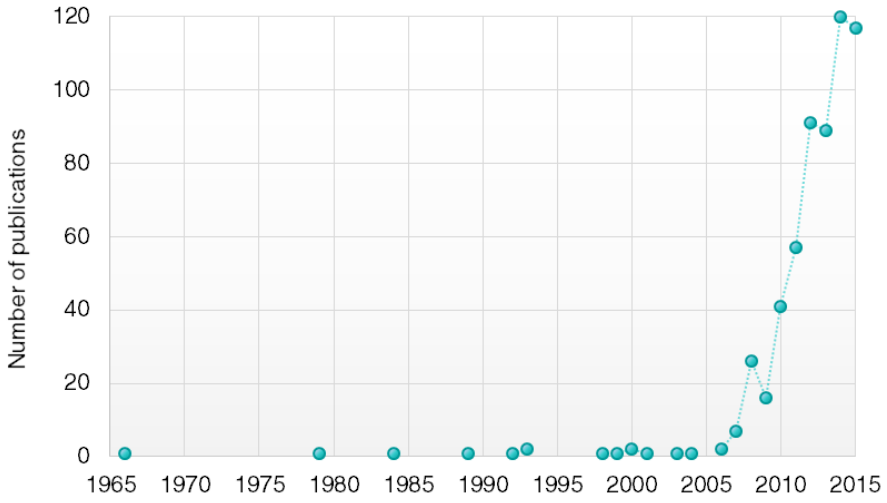

Figure 1.3. Increasing trend in the number of scientific publications addressing MSP per year, between 1965 and 2015 (data was collected using ISI Web of Knowledge, all databases, and a search using the terms "marine spatial planning", "maritime spatial planning", "ocean planning", "marine planning" or "maritime planning").

Portugal has the second largest EEZ in the EU [16], is one of the world's largest maritime nations, and has an important role in the implementation of EU maritime policies. The Portuguese maritime space currently has 1.7 million km^2 [16]. In 2009 a proposal for the delimitation of the Portuguese continental shelf beyond the 200 nm was submitted to the United Nations in order to increase its size by 2.15 million km^2 [17]. This means that Portugal may soon have around 4 million km^2 of maritime space under its jurisdiction – although beyond the 200 nm this only pertains to the seabed and the subsoil[1] (Figure 1.4). The perceived need to develop sustainable ocean planning and management processes in Portugal has increased in the last decade. During this period:

- Two National Ocean Strategies (NOS) were developed and approved [18, 19];
- The EU Marine Strategy Framework Directive (MSFD) was transposed into national internal law [20, 21];
- Four national Marine Strategies were developed and published in accordance to the MSFD [22-25];

[1] According to the United Nations Convention on the Law of the Sea (UNCLOS), beyond the 200 nm nations only have jurisdiction over the seabed and the subsoil – i.e. mineral and other non-living resources together with living organisms belonging to sedentary species. Superjacent waters remain under international jurisdiction.

- The Portuguese government developed the *Plano de Ordenamento do Espaço Marítimo*[2] (POEM) initiative [26-28];
- The first Portuguese MSP framework law [29] was approved, and;
- A set of MSP complementary regulations [30] was approved, which not only develop the framework law but also transpose the EU MSP Directive into Portuguese legislation.

Most of these documents commonly identify EBM as a baseline principle for MSP.

Contrary to other EU Member States whose maritime spaces are already under significant anthropogenic pressures and where MSP processes arose as an answer to an existing need – as it is the case, for example, in the North Sea [31] – Portugal does not yet have a very intense utilisation of its maritime space. Most existing human uses are in fact limited to the territorial sea (12 nm from the baseline), and most predominant ones are "traditional" uses, such as fishing, maritime transportation and tourism [28, 32]. As discussed by Ehler [12], this should not, however, be used as a reason to hinder the development of MSP. "The argument is often heard that if a particular region *has no problems today*, MSP is not needed: Why invest in MSP *if the level of human activity is small*, or if there are no conflicts among human uses or between human activities and nature? In fact, the *best time* to begin planning is *before* problems arise"[3] [12]. Accordingly, in 2006 the Portuguese government recognized the importance of MSP as one of the three pillars of the NOS 2006-2016, and in late 2008 it established the development of a national marine spatial plan [26].

The Portuguese MSP process can be considered to have two main phases. The first one is the POEM phase. The POEM represented the first Portuguese approach towards MSP at the national level, and extended over a period of four years (2008-2012). During most of that period it was intended to be the first Portuguese "marine spatial plan", but in the end it was instead published as a "study" on the existing and potential Portuguese ocean uses, thus having no legal or regulatory formal aspect [33]. The second phase is the MSP legislation phase. This started immediately after the release of the POEM with the development of drafts for a framework law on marine planning and management. After being subjected to a long

[2] Which literally means "Marine Spatial Plan".

[3] Italics by the author.

parliamentary discussion, in April 2014 the first Portuguese MSP framework law was promulgated – Law No. 17/2014 [29]. However, as a framework law this diploma was not enforceable until the promulgation of a set of subsequent regulations. For that reason, within the legally established period, the MSP complementary legislation was broadly approved by the Portuguese Council of Ministers, and in March 2015 it was promulgated – Decree-Law No. 38/2015 [30].

At present, the Situation Plan, one of the two types of MSP instruments that are established both in the framework law and in its complementary regulations, is being developed for the entire Portuguese ocean space. Once approved, which is expected to occur by the end of 2016, the Situation Plan will constitute the first government approved Portuguese marine spatial plan. Until then the POEM was established as the reference situation for ocean planning and for the granting of new private use titles [30]. Given that the present and future of Portuguese ocean management are currently being defined, understanding how the Portuguese MSP process was conducted so far, together with understanding major opportunities and threats to its long-term adequacy and success, is a challenge of the utmost relevance, and the topic of this dissertation.

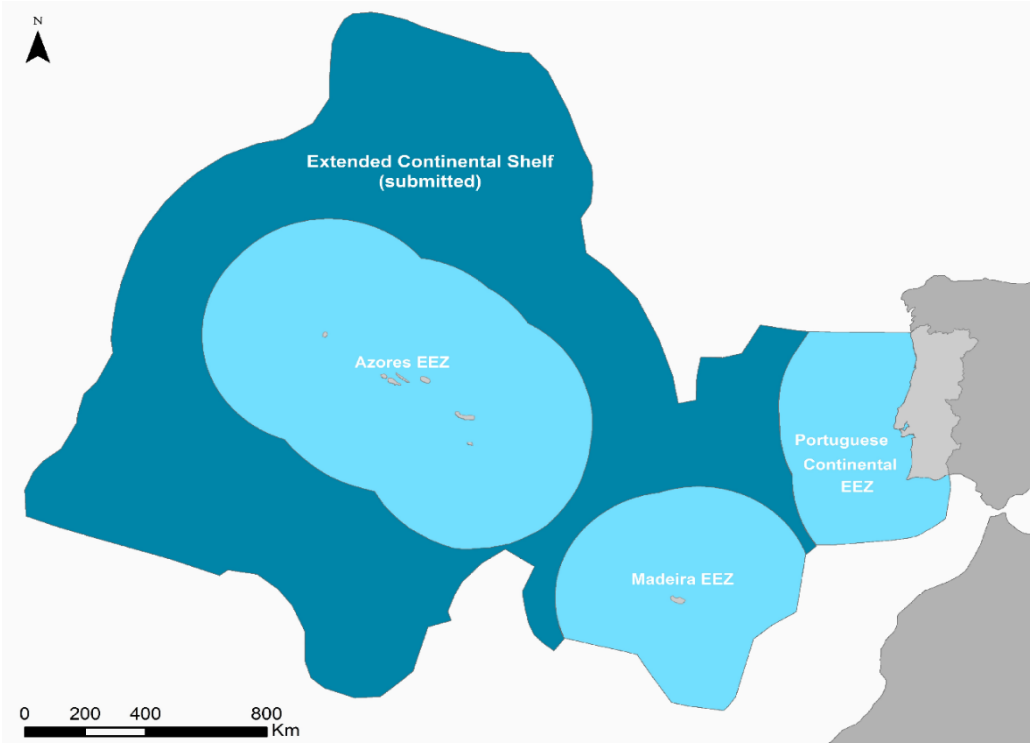

Figure 1.4. Maritime space under Portuguese jurisdiction [21]. EEZ: Exclusive economic zone.

1.2. Objectives and dissertation structure

The present dissertation aims to investigate the role of MSP in achieving sustainable ocean management, and uses the Portuguese process as a case study. In this context, three main research questions arose (at the beginning of the process):

1. How can MSP contribute to ensure sustainable ocean management, one that ensures resilient and healthy marine ecosystems?
2. To what extent is the Portuguese MSP process being developed in accordance with international recommendations towards sustainable MSP?
3. What are the major challenges for the future of Portuguese ocean planning and management?

In addition to the scientific contribution that the dissertation outcomes are expected to provide, answering these questions is a challenge of the utmost importance because it ultimately enshrines an opportunity to actually contribute to the development of an appropriate and sustainable marine planning and management process in Portugal.

This dissertation is composed by six chapters, three of which are already published in international peer-reviewed scientific journals – i.e. Chapters 2, 3 and 4. Chapter 1 is the general introduction, and Chapter 6 contains the general conclusions and final considerations. Hence, Chapters 2 to 5 are the four main research chapters of the dissertation, where research results are presented, analysed and discussed in detail. The conceptual model that was followed is presented in Figure 1.5.

Chapter 2 on *Sustainability concepts* was developed during 2013, and therefore only addresses international and European documents on MSP, as well as related scientific literature, that were published until the end of that year. This means that the EU MSP Directive [34] was not yet approved at that time, being available only as a Proposal [35]. The Chapter's main objectives were to:

a. Investigate how sustainability and EBM concepts were considered in MSP;
b. Review how EU maritime policy initiatives addressed these three concepts – i.e. sustainability, EBM and MSP;
c. Analyse the different types of sustainability approaches that MSP could follow – i.e. strong sustainability *versus* weak sustainability;

d. Analyse how adaptive management could address some of the main identified challenges.

Chapter 3 on *Sustainability in Portuguese MSP* was also developed during 2013, and therefore only analyses the Portuguese MSP process from the POEM until Law Proposal No. 133/XII [36] – the preliminary version of the MSP framework law. In fact, three days after this chapter's material was accepted for publication in its final form, the MSP framework law was promulgated. The chapter's main objectives were to:

e. Analyse and discuss the state of affairs regarding the Portuguese MSP process;

f. Analyse how sustainability concepts were considered in the Portuguese MSP process – namely in the POEM and in the Law Proposal No. 133/XII;

g. Discuss the major challenges to Portuguese MSP long-term sustainability.

Chapter 4 on *challenges from the new MSP Diploma* analyses and discusses the Portuguese MSP complementary regulations which "implement" the MSP framework law. Because this chapter was developed in 2015, the EU MSP Directive had already been approved. Because the MSP Diploma regulates the MSP framework law, many aspects of the law itself are also addressed in this chapter. Its main objectives were to:

h. Analyse and discuss the MSP Diploma, particularly in light of the challenges it may pose for implementing a sustainable MSP process;

i. Analyse the Diploma's contents, namely in what pertains to environmental references, and comparing them to the EU MSP Directive contents;

j. Analyse the link between the MSFD and MSP implementation in Portugal;

k. Discuss the main challenges that the Diploma poses to the long-term sustainability of Portuguese ocean management.

Chapter 5 on the *history of the Portuguese MSP process* is exactly that, a description of the entire process from the development of the POEM up to the approval of MSP complementary regulations and beyond. In fact, because the analysis and discussion of results was carried between 2015 and 2016, all the relevant events that took place more recently are addressed in this chapter. Its main objectives were to:

l. Develop a policy synthesis and analysis of the Portuguese MSP process. Much of the information in this chapter is based on a set of thirty-eight formal semi-structured

interviews conducted with a group of key informants involved in, or knowledgeable of, the process, together with an extensive literature review. This chapter explores and unravels the institutional, political and socioeconomic aspects that affected the process outcomes;

m. Explore the main perceptions of key informants on a set of fundamental topics – i.e. the origins of MSP in Portugal, the POEM strengths and weaknesses, the MSP framework law strengths and weaknesses, the POEM ending, the link between the POEM and the MSP framework law, the role of the environment, and future challenges for MSP in Portugal.

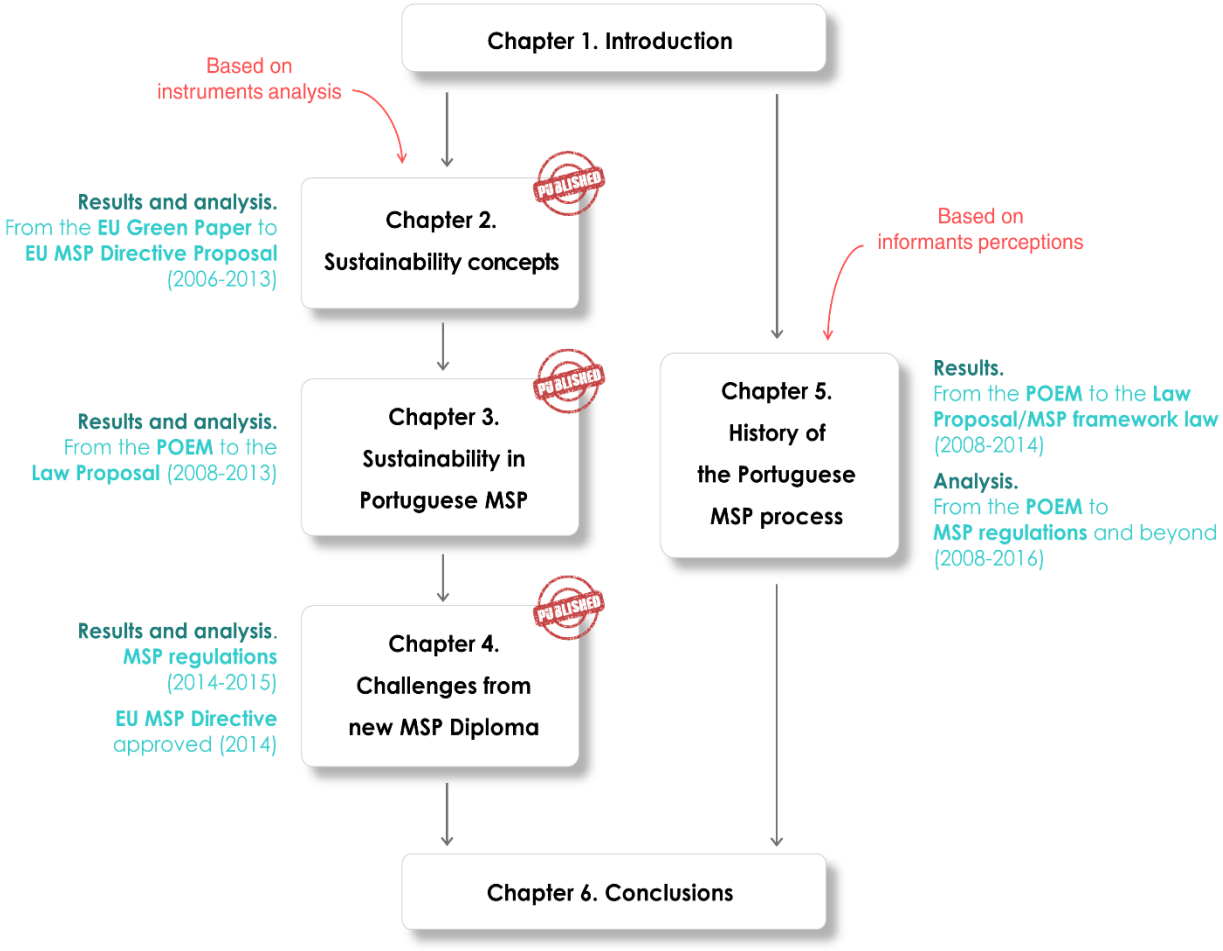

Figure 1.5. Dissertation structure and conceptual model. Close to each box representing a chapter information can be found regarding its timeframe (i.e. when results were both obtained and analyzed/discussed) as well as an identification of the major documents/instruments that were analyzed. While Chapters 2, 3 and 4 result from the direct analysis of available documents and instruments, Chapter 5 is largely based on a number of semi-structured interviews that were conducted with key-actors of the Portuguese marine spatial planning process. Chapters 2, 3 and 4, are already published in international peer-reviewed scientific journals, and identified as so.

In the following subsection, a detailed summary is presented for each research chapter (Chapters 2 to 5) including not only the above mentioned objectives, but also the main results and principal conclusions that were attained within each one.

1.3. Research chapters' summaries

Chapter 2—Sustainability concepts

Chapter 2 reviews how sustainability and EBM have been included so far within the MSP general framework. In order to do this it carries out (i) a review on the links between sustainability, EBM and MSP in EU maritime policy initiatives; (ii) an analysis on the differences between ecosystem-based MSP versus MSP focused on delivering blue growth; and (iii) a discussion on how adaptive management may address some of the main challenges found in achieving sustainable ocean management. From the EU Green Paper (2006) to the EU MSP Directive Proposal (2013), MSP processes based on the principle of EBM have been recognized as a necessary tool to ensure maritime sustainable development. Although ecosystem-based MSP has been presented as the best way to ensure both ecosystem conservation and development of human activities, most national and European MSP initiatives seem to follow a MSP approach focused in delivering blue growth. A challenge, therefore, arises: *How to adjust policy decisions to properly preserve ecosystems and the services they provide?* If truly implemented, an adaptive approach seems to be a way forward in ensuring that spatial planning, management and policy-making in marine spaces can be continuously adjusted, thus allowing for sustainability.

Chapter 3—Sustainability in Portuguese MSP

Chapter 3 analyses and discusses the present state of affairs regarding the Portuguese MSP process. It comprises (i) an update on the status of MSP in Portugal; (ii) an analysis on how sustainability concepts are considered in the Portuguese MSP process; and (iii) a discussion on major challenges to Portuguese MSP long-term sustainability. The Portuguese MSP process can be divided in two phases: development of the POEM – initially intended to be the first Portuguese marine spatial plan but then published as a "study"; and development of the Law Proposal No. 133/XII on marine planning and management – by then, soon to be approved. A

key question for the long-term adequacy of Portuguese MSP is how is it addressing environmental sustainability: *Is it relying on soft or hard sustainability concepts? Is it prioritizing the achievement of good environmental status (GES) or blue growth?* In both cases (POEM and Law Proposal), soft sustainability seems to be the underlying principle, because although the ecosystem approach is recognized as fundamental, environmental quality seems to come second when set against economic goals.

Chapter 4—Challenges from the new MSP Diploma

After promulgating its first national framework law on MSP, Portugal has approved a new MSP Diploma that aims at "developing" (i.e. implementing in detail) the framework law, as well as at transposing the EU MSP Directive into national law. Chapter 4 analyses and discusses this new Portuguese MSP Diploma. And it does that by (i) briefly presenting its main specificities; (ii) analysing its contents, and comparing them to the EU MSP Directive contents, namely in what pertains to environmental references; (iii) analysing the link between the MSFD and MSP implementation in Portugal; and (iv) discussing the main challenges that the Diploma poses to the long-term sustainability of Portuguese ocean management. Results show that environmental references represent only a small amount on the Diploma contents (c. 2% against c. 5% in the EU MSP Directive). Main environmental topics addressed include environmental "monitoring" and "evaluation", "environmental protection", "sustainability", and "good (environmental) status", while the ecosystem-based approach is never referred to. In Portugal the same government entity accumulates responsibilities over the implementation of both MSP and the MSFD, and such institutional framework is expected to promote sustainable maritime uses, as well as a true coordination/communication between both processes. The Diploma enshrines several "unusual" aspects that may compromise environmental sustainability. However, although it is already approved and promulgated, the Diploma may still be amended it in the framework of a parliamentary discussion.

Chapter 5—The history of the Portuguese MSP process

Chapter 5 tells the story of the Portuguese MSP process from the beginning of the POEM to the development of MSP regulations, and beyond, by means of developing a policy analysis. Based on a set of thirty-eight formal semi-structured interviews conducted with a group of key informants from Portuguese MSP process, together with an extensive literature review to

support described events, the chapter explores and unravels the institutional, political and socioeconomic aspects that influenced the outcomes of the process. It also explores the main perceptions of informants on a set of key topics: origins of MSP in Portugal; the POEM strengths and weaknesses; the MSP framework law strengths and weaknesses; the POEM ending; the link between the POEM and the MSP framework law; the role of the environment; and future challenges for MSP in Portugal. Results show that there is a number of conflicting views regarding aspects that are considered as strengths or as weaknesses, but also a number of similar views between the POEM and the law. Lessons learned from the POEM must be taken into account and further applied in the "new generation" of marine spatial plans that will be developed in the framework of the MSP law and its subsequent regulations. Although almost a decade has passed since the beginning of the POEM, Portugal is still in the very beginning of MSP because it never actually had a government approved marine spatial plan. This means that all the challenges that arise from implementing, monitoring, and revising and adapting MSP are still to come. But Portuguese responsible entities already learned significantly and gained expertise that will be fundamental in paving the way towards achieving a sustainable and sustained MSP process.

2 How sustainable is sustainable marine spatial planning? Part I—Linking the concepts

The material in this chapter is currently published as: Frazão Santos C, Domingos T, Ferreira MF, Orbach M and Andrade F. How sustainable is sustainable marine spatial planning? Part I–Linking the concepts. *Marine Policy* 49 (2014) 59-65. (doi:10.1016/j.marpol.2014.04.004)

2.1. Introduction

In 2007, the European Union (EU) adopted an Integrated Maritime Policy [37] that encompasses the regulation of all elements of maritime activity, while providing for a new ecosystem-based management approach (EBM) to human activities in the sea [38]. EBM is an integrated, place-based approach that focuses on a specific ecosystem and on the range of activities affecting it, recognizing the existing connectivity amongst all of its elements, including humans ("people are integral components of social-ecological systems[4] (...) [as they] both affect and respond to ecosystem processes" [39]), and thus aiming for both socioeconomic development and environmental preservation [5, 40]. In 2008, the EU Marine Strategy Framework Directive (MSFD) reinforced this idea, while requiring member states to apply the EBM concept and to achieve and maintain a "good environmental status" (GES) in their marine environment [41].

[4] Although the term *socio-ecological systems* is commonly accepted and used, we acknowledge that if humans are truly considered as part of ecosystems it is somewhat redundant to use it. The "ecological system" already encompass humans by definition (as any other occurring species) and, consequently, their social, cultural and economic dimensions; referring to *socio-ecological systems* is the same as referring to "a store that sells *fruits* and *apples*" or "an area to protect *marine mammals* and *whales*', assuming the second definition is not included in the first. This is why throughout the text we preferred the use of the term *ecosystems*.

Marine spatial planning (MSP) – or *maritime* spatial planning, as it is referred to in Europe – has been pointed out by some member states as an operational tool to implement EBM and, subsequently, MSFD goals [4, 38, 42, 43]. Commonly defined as a "public process of analysing and allocating the spatial and temporal distribution of human activities in [coastal and] marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process" [1], MSP consists of "data collection, stakeholder consultation and the participatory development of a plan" [4], as well as the ensuing stages of implementation, monitoring, evaluation and revision of such plan [44]. Given that EBM is to be the underlying principle of MSP [4, 5], the planning process must always take into account the biophysical, human and institutional dimensions of a given ecosystem – its "total ecology" [9] – making the necessary trade-offs to achieve "the right mix of protection and use" [45], thus allowing for socioeconomic development without compromising the use of resources by future generations[5]. Ecosystem-based marine spatial planning and management has been presented, therefore, as the best way to ensure sustainability of marine ecosystems and the services they provide [1].

Given its relevance for the long-term adequacy of marine planning and management, the present work analyzes how *sustainability* and *EBM* have been included so far within the MSP general framework. It starts by (1) reviewing the links between sustainability, EBM and MSP in EU policy initiatives; (2) then it analyzes the differences between MSP focused on ecosystem conservation and MSP that prioritizes the development of a maritime economy; and finally (3) it discusses how an adaptive MSP approach could address some of the main challenges found in achieving sustainable ocean management.

2.2. Linking the concepts: Sustainability, EBM and MSP

According to Katsanevakis et al. [46] in a recent review on the subject, EBM is an "emerging paradigm of ocean management" that has been promoted worldwide as the best way to ensure sustainability of marine ecosystems goods and services. Although there is a plethora of different definitions (e.g. [6, 47-49]) and terminologies for EBM (e.g. ecosystem

[5] As pointed out by Chapin et al. [39] "efforts that fail to address the synergies and tradeoffs between ecological and societal well-being are unlikely to be successful" in the long-term.

management, ecosystem approach, ecosystem-based marine spatial management), a set of common criteria to describe EBM was identified by Arkema et al. [50]. According to these authors, EBM is characterized, in general, by the concepts of "sustainability", "ecological health" and "inclusion of humans in the ecosystem" and, more particularly, by considering: (1) *specific ecological criteria*, such as "ecosystem complexity" or "ecosystems dynamic nature across temporal/spatial scales"; (2) *specific human dimension criteria* – e.g. "ecosystem goods and services", "economic factors" and "stakeholders engagement"; and (3) *specific management criteria*, such as "adaptive management", "co-management", "precautionary approach", "interdisciplinary knowledge" or "monitoring" [6] [50]. Concomitantly, Stojanovic and Farmer [51] recognize that although sustainability is constantly used to frame the intentions of ocean policies[7], in practice, there also are a multiplicity of interpretations for it (i.e. it is highly differentiated).

In the last decade, EU maritime policy initiatives have continuously emphasized the importance of progressing towards EBM implementation, as well as of achieving a sustainable use of marine and coastal ecosystems (Figure 2.1). In 2006, the *EU Green Paper*, recognizing that sustainable development was "at the heart of the EU agenda", identified the opportunity to apply such a principle to the oceans [52]. Aiming to promote a debate on the future of EU Maritime Policy, the Green Paper sought to achieve the right balance between the socioeconomic and environmental dimensions of sustainable development, and to consider a new and holistic approach to the management of marine/coastal areas. Here, for the first time, the Commission acknowledges the need for "a system of spatial planning for maritime activities" that must build on the EBM approach [52]. In fact, although the EBM concept had been previously mentioned in the Commission's communication *Towards a Strategy to Protect and Conserve the Marine Environment* [53] and in the proposal for a *Marine Strategy Directive* [54] (which later resulted in the MSFD, the "environmental pillar" of EU maritime policies) such documents have no specific reference to MSP.

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[6] "Ecological" and "human dimension" criteria relate to specific components of ecological health and the inclusion of humans in the ecosystem, while "management" criteria include diverse approaches to administration as well as the use of science and technology.

[7] These authors analyzed seven maritime governance regimes – Australia, Canada, New Zealand, EU, South Africa, United Kingdom and United States of America – in order to study how sustainability is conceptualized for the oceans.

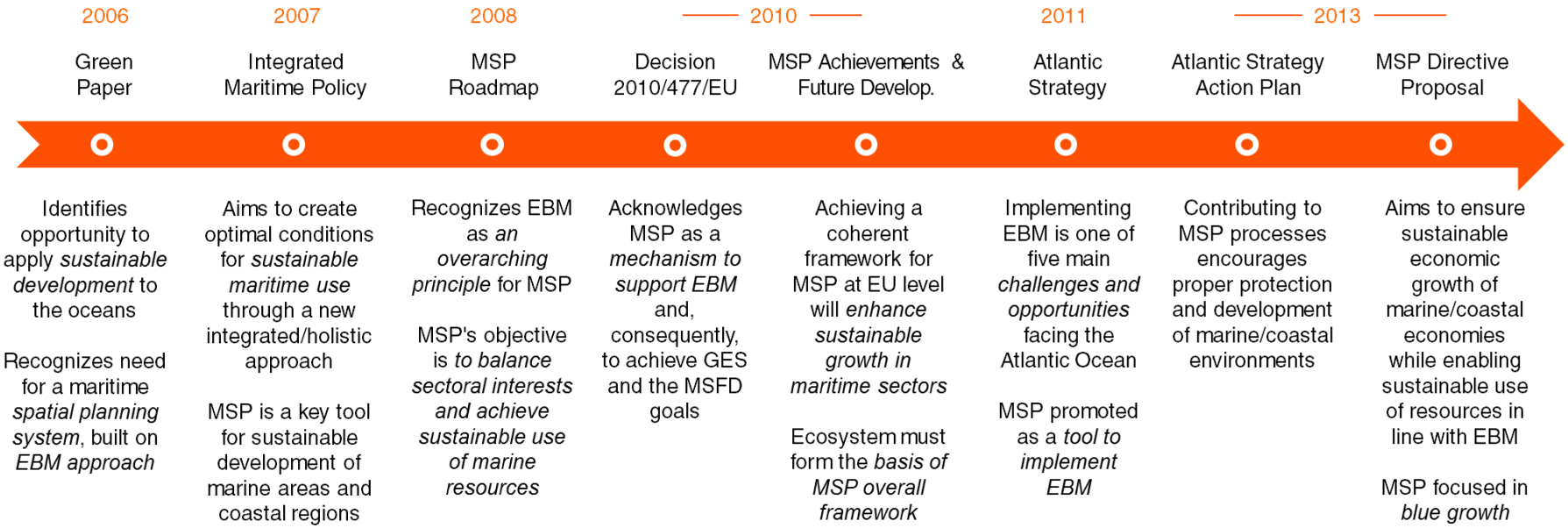

Figure 2.1. Timeline of major European policy initiatives addressing marine spatial planning (MSP), with a brief description of each initiative's main ideas regarding MSP, ecosystem-based management (EBM) and sustainability.

Later in 2007, however, the *EU Integrated Maritime Policy* (IMP) [37] clearly identified MSP as one of three major "horizontal planning tools" for integrated policy-making (that cut across maritime sectoral policies and support joined-up policy making). Aiming to create optimal conditions for sustainable ocean use (which is acknowledged by the Commission as a "major global challenge"), while enabling the growth of maritime sectors and coastal regions, the IMP highlights the need for a new, integrated and holistic approach that can provide "a coherent policy framework" for such a maritime sustainability. Here, MSP emerges as a "fundamental tool for the sustainable development of marine areas and coastal regions, and for the restoration of Europe's seas to environmental health" by addressing emerging challenges from growing competing uses in the maritime space (e.g. maritime transport, aquaculture, and off-shore energy production) [37].

Following the intentions expressed in the IMP, in 2008 the Commission released the *EU MSP Roadmap*, where the need for MSP is reaffirmed and EBM is identified as "an overarching principle for MSP" [8] [4]. The importance/role of sustainability in MSP is also clearly established: MSP's objective is "to balance sectoral interests and achieve sustainable use of marine resources in line with the EU Sustainable Development Strategy" [4]. In 2010, a second communication on MSP – *MSP in the EU - Achievements and future development* [55] – also recognizes the importance of achieving sustainability in marine planning and management. In fact, here the Commission considers that (1) it is important to achieve a coherent framework for MSP at EU level because it will "enhance sustainable growth in the maritime sectors", and (2) "without any MSP in place, the increased risk of spatial conflicts between expanding maritime uses, including the protection of the marine environment, may result in a suboptimal combination of growth and [environmental] sustainability" [55]. This communication further recognizes that "the ecosystem must form the basis of the overall framework for MSP" [55].

Also during 2010, the link between MSP and the MSFD was finally, and unequivocally, defined. In Decision 2010/477/EU [42] MSP is acknowledged as a mechanism – or a "practical approach" – to support EBM[9] and, consequently, to achieve GES and the MSFD goals. In fact,

[8] Although, in effect, EBM is more than a "principle': it is a framework or a process.

[9] Decision 2010/477/EU states that "specific tools that can support an ecosystem-based approach to the management of human activities required to achieve good environmental status (…) include (…) spatial and temporal distribution controls, such as maritime spatial planning". Already in 2007, Ehler and Douvere stated that MSP could "provide a practical approach to long-term ecosystem-based management" [44].

the MSFD aims to promote the improvement of environmental quality in accordance with the principle of sustainable development, through the achievement and/or the maintenance of GES. And because GES corresponds to an environmental status where marine areas are (1) ecologically diverse and dynamic, (2) clean, healthy and productive (within their intrinsic conditions), and (3) their use is at a level that is sustainable, an EBM approach needs to be consistently applied [41]. Being a practical way to support EBM – especially if "conducted as a continuous, iterative, and adaptive process" [5] –, MSP ends up being an instrument to support the wider concept of environmental sustainability. In fact, "ecosystem-based MSP" is to be "an integrated planning framework that (…) support[s] current and future uses of ocean ecosystems (…) [while ensuring] the delivery of valuable ecosystem services for future generations in a way that meets ecological, economic, and social objectives" [10].

In the *EU Atlantic Strategy* [56], in 2011, implementing the ecosystem approach is again a highlighted topic, this time as one of the five groups of "challenges and opportunities" [10] facing the Atlantic Ocean. Here, again it is recognized that MSP must be promoted "as a tool for implementing the ecosystem approach" and that "such a process [of implementing EBM] should strengthen coherence, connectivity and resilience (…) in the Atlantic". Among the main "tools" to be used by Atlantic stakeholders in programming decisions, MSP is also referred. In fact, "maritime policy flagship initiatives on maritime surveillance, marine knowledge and *maritime spatial planning* (…) will set standards at an EU level" [11]. The *Action Plan* that recently complemented this strategy [57], and which is designed to deliver "smart, sustainable and socially inclusive growth", also recognizes that contributing to member states" MSP processes is a way to encourage proper protection and development of Atlantic's marine and coastal environments.

Finally, in 2013, the Commission released a proposal for a Directive establishing a framework for the effective implementation of MSP in EU waters [35] – together with the implementation of integrated coastal management (ICM)[12]. Here, the concepts of MSP, EBM and sustainability are plainly linked, as the proposal's ultimate goal is to ensure "the sustainable

[10] Together with (1) reducing Europe's carbon footprint; (2) sustainable exploitation of the Atlantic seafloor's natural resources; (3) responding to threats and emergencies; and (4) socially inclusive growth.

[11] Italics by the authors.

[12] The EU MSP Directive is still open for discussion (as it is still a working document) and expressed policy decisions may change in the short term.

economic growth of marine and coastal economies while enabling diverse and sustainable uses of marine and coastal resources by considering the economic, social and environmental pillars of sustainability in line with the ecosystem approach" [35]. However, this context relates to an MSP focused on ensuring "blue growth" [13] [58] and where ecosystem conservation is required, although not the ultimate goal. In fact, here EBM is first expected to allow for MSP to (1) prevent/reduce conflicts among competing sectoral activities and (2) ensure that the cumulative pressure of all activities is kept within levels compatible with GES; and, only then, to (3) ensure the protection and preservation of marine/coastal goods and services [35]. Nevertheless, this Directive proposal further acknowledges that, in order to effectively ensure sustainability: (1) "marine spatial plans" and "ICM strategies" must be properly coordinated/integrated (because marine and coastal activities are closely linked); and (2) governments, stakeholders, and the general public need to be consulted at an appropriate – i.e. early – stage of MSP and ICM processes.

2.3. Sustainable marine spatial planning?

Concomitantly to MSP dissemination in EU ocean policies, several nations worldwide have developed spatial planning processes in an effort to "advance sustainable ocean development" [11] – for reviews on national MSP processes and on MSP specificities see e.g. [10, 11]. In effect, according to Jay et al. [11] this global dimension of MSP "reflects the international scientific and policy discourse calling for the adoption of MSP in the interests of environmental integrity and sustainable use of the world's seas and oceans". But a key question for the long-term adequacy of MSP is how it is actually addressing sustainability: Is it relying on *hard* or *soft* sustainability concepts (cf. [59])? Does it prioritize the *achievement of GES* or rather *blue growth*?

Many advocate that MSP "has its roots in marine nature conservation", as an extension of marine protected areas establishment (e.g. Australian Great Barrier Reef Marine Park[14]) and as

[13] *Blue growth* is "the long term strategy to support sustainable growth in the marine and maritime sectors as a whole. It recognizes that seas and oceans are drivers for the European economy with great potential for innovation and growth".

[14] Merrie and Olsson [60] identify the original zoning scheme of the Great Barrier Reef Marine Park as one of four "preconditions for the emergence of MSP" – the others being (1) terrestrial land-use and conservation

a practical way to address broader concerns on biodiversity conservation (e.g. the goals of the *Rio+20 United Nations Conference on Sustainable Development*) [11]. Others believe that although MSP was not "created explicitly for conservation or protection" it does catalyze environmental sustainability, by fostering the identification and allocation of areas for conservation purposes [10]. According to Qiu and Jones [59], a true "ecosystem-based MSP", focused in ecosystem conservation, builds on *hard* sustainability (or *strong* sustainability, as it is commonly referred to in Ecological Economics). And building on hard sustainability, ecosystem-based MSP must then ensure: (1) that the overall utility of a system increases over time – the sum of its natural (e.g. ecosystem services and goods), man-made and human capital (e.g. infrastructures, technology, knowledge); and (2) the system's natural capital never decreases [61]. This means that marine goods and services – here considered the basis or foundation for MSP – are not interchangeable with other types of capital and, should they collapse, socioeconomic sectors that depend on them are expected to collapse as well [59]. Due to the strong focus on ecosystems preservation, this "type" of MSP processes seems to prioritize the *achievement of GES* in marine ecosystems.

However, as Merrie and Olsson [60] recently pointed out "as MSP spread, the focus on ecosystem-based management and stewardship became diluted" (*ecosystem stewardship* is a framework, or strategy that intends to foster sustainability of ecosystems – including humans – under changing/uncertain conditions [39] [15]). This "shift" in MSP drivers seems to have occurred due to an increasing need to manage conflicting (existing and future) maritime uses, especially in highly industrial maritime areas [62]. Concomitantly, key points from the EU-funded MESMA project [63] highlight that "MSP in the case studies was more about integrated use than implementing ecosystem-based management. That is, the MSP was intended to provide for, or at least not obstruct, strategically important infrastructure development projects".

planning, (2) the development of Geographical Information Systems and (3) development of science to be used in marine planning processes.

[15] Ecosystem stewardship integrates three overlapping sustainability approaches (for detailed information cf. [39]): (1) reducing vulnerability to expected changes, (2) fostering resilience to sustain desirable conditions in face of perturbations/uncertainty and (3) transforming to potentially more favorable trajectories.

Figure 2.2. Hard (strong) and soft (weak) sustainability concepts. A socio-ecological system's overall utility (U) results from the sum of its natural capital (N), man-made capital (K) and human capital (L). Hard sustainability requires that U increases over time and that N never decreases. Soft sustainability also requires U to increase, but allows for trade-offs among N, K and L. Although conceptually pointing in different directions, near a tipping point of ecosystem's collapse the two sustainability concepts become equivalent, because N's value becomes infinite.

In accordance, most national (e.g. Portugal, Belgium, Germany, Norway, United States of America [10, 11, 64]) and European MSP initiatives (e.g. MSP Directive Proposal [35]) follow what Qiu and Jones [59] define as "integrated-use MSP", based on *soft* sustainability (or *weak* sustainability, as it is commonly referred to in Ecological Economics). In this context, ecosystem conservation is seen as just "one" of the sectors/pillars upon which MSP builds – the other being fisheries, energy, tourism, navigation, security, etc. – and the ultimate goal of MSP is to foster economic growth related to maritime sectors in a sustainable way [59]. That is to say, *blue growth* seems to be its priority.

Contrary to the hard sustainability concept, soft sustainability allows for compensations among natural, man-made and human capital, provided the system's capacity to supply utility increases over time [61]. But it is clear that these substitutions of ecosystem services/goods by socioeconomic development can only happen up to a "tipping point" of ecosystem change, beyond which marine services and goods collapse (cf. [65] for more information on such "boundaries"). In fact, if such threshold is crossed and ecosystems collapse irreversibly, related socioeconomic sectors will consequently come to an end, and society's overall utility decreases – and, ultimately, *soft sustainability* is replaced by *unsustainable development* [61]. This means that as such a threshold is approached, natural capital's value becomes infinite and the two sustainability concepts – hard versus soft, or strong versus weak – if correctly understood, become equivalent (Figure 2.2). However, within an integrated-use MSP context, there might be a real risk of overshadowing the importance of ecosystems preservation, namely by underestimating how close such tipping points may be.

An additional problem of integrated-use MSP is that ecosystem concerns, although still part of the planning and management process, are commonly limited to the establishment of "small, unconnected networks of marine reserves" [60] – which, in turn, present a number of limitations regarding their effectiveness for nature conservation (cf. [66, 67]). Concomitantly, the discussion on whether conservation should be considered a marine "use" or a policy goal underpinning the entire MSP process [68] is far from being resolved. According to Kyriazi et al. [69] "the plethora of interpretations regarding the meaning, role and position of NC [nature conservation] in planning, makes such an attempt [of integrating NC in MSP decision-making] more complex". These authors conclude that, so far, there is no common approach to encompass ecosystem conservation in MSP initiatives, but further highlight that ecosystem conservation should be put in a central position during MSP processes in order to achieve GES.

Two major challenges, therefore, arise. First, how to deal with the "risks" inherent to integrated-use MSP, and how to adjust policy decisions that are based on it in order to properly preserve ecosystems and the services they provide? Second, how to identify tipping points before they are crossed? According to Costanza et al. [70] the answer for sustainable ocean governance relies on an integrated approach – across disciplines, stakeholder groups, and generations – based on the "adaptive management" concept. The next section addresses such a potential approach in more detail.

2.4. Adapting marine planning and management: a pathway toward sustainability?

Adaptive management (AM) is a management approach that focuses on systematic learning of a given ecosystem through experimentation, monitoring and evaluation, and subsequent adaptation of management and policy options based on obtained results. A key characteristic of AM is that it acknowledges uncertainty and assumes that it should not be used to prevent or delay the implementation of policy/management decisions, meanwhile allowing damaging pressures to occur – this is especially relevant regarding preservation of ecosystems goods and services [71-73]. In fact, Ludwig et al. [74] suggest managers to "confront uncertainty" and to "act before scientific consensus is achieved (...) [stating that] we do not require any additional scientific studies before taking action". Moreover, "adopting processes that enable existing data to be used, whilst taking account of further information when it becomes available, is (...) critically important (...) [and] so too are measures to ensure that management processes adapt to meet the needs of changing circumstances" [72].

Dealing with the allocation of maritime space and uses, while making the necessary trade-offs among the biophysical, human and institutional dimensions of a given ecosystem to achieve socioeconomic development without compromising resources use for future generations [21], MSP needs to be able to incorporate "change" over time – e.g. environmental change, technological change, changes in political priorities, new economic realities, or new knowledge, information and data[16] [75]. Likewise, the degree to which MSP measures are meeting planning and management goals needs to be evaluated (and measures need to be adapted, when they are not). For these two reasons, an adaptive approach that allows the revision and adaptation of planning objectives and management decisions from time to time seems to be the best course to ensure MSP suitability and sustainability [1]. In fact, as Chapin et al. [39] point out, "flexibility in governance to deal with change is crucial for long-term social-ecological resilience and sustainability".

The importance of AM to MSP is recognized in EU policies: (1) the MSP Roadmap acknowledges that AM is necessary to ensure that MSP evolves with knowledge [4]; (2) the

[16] Douvere and Ehler recognize that although these changes are most commonly "external" to the MSP process they will probably affect MSP outcomes.

communication on MSP's achievements and future development identifies the AM role in MSP by concluding that "monitoring and evaluation are needed for adaptive management of sea areas and should cover socio-economic, environmental and governance" dimensions [55]; and (3) the MSFD states that an *ecosystem-based adaptive management* needs to be applied to achieve GES [41]. Concomitantly, UNESCO's document *Marine spatial planning: a step-by-step approach toward ecosystem-based management* also recognizes that MSP processes need to implement an AM approach in order to be sustainable [1]. For that reason, the last step of this ten-step guide for a full MSP process is "adapting the spatial management plan" and, within it, two major outcomes are expected: (1) proposals for adapting management goals, outcomes and strategies (in each new round of planning); and (2) identification of knowledge gaps [1].

Monitoring and evaluation are, in effect, key to AM [72]; they are the "vehicles" that allow responsible entities to learn about the effects of management measures, and further adjust planning and management processes. In fact, "only by integrating monitoring and evaluation into the overall MSP process, can the benefits of an adaptive approach be fully realized" [75]. According to these authors, monitoring of MSP processes can be separated into (1) "state-of-the-environment monitoring", which measures the ecosystem's quality/health, and (2) "performance monitoring" that assesses the effects of management measures/actions. The latter is especially relevant for adapting MSP because it is what will allow responsible entities to establish if observed changes in the "managed" system are due to MSP measures or to other factors. To assess MSP "performance', a set of socioeconomic, ecological and governance indicators – closely attached to MSP goals – needs to be used [75]. In fact, these authors further acknowledge that MSP general goals need to be translated into "clear, measurable objectives and outcomes" to make performance evaluation possible.

Results obtained through monitoring are then used to evaluate MSP. Such evaluation is done on the basis of whether MSP measures are contributing to achieve established goals or not, and according to three main criteria: (1) effectiveness – achievement of goals; (2) efficiency – cost/benefit balance; and (3) equity – distribution of benefits [75]. Furthermore, Carneiro [76] proposes a specific framework for MSP evaluation based on four essential steps:

(1) evaluation of the plan-making process[17]; (2) analysis of the contents of the plan document; (3) evaluation of plan implementation; and (4) evaluation of plan outcomes and impacts. A fifth aspect considered by this author is the importance of actually communicating results and promoting their use.

However, despite the recognized importance of AM to both sustainable ocean governance in general, and MSP in particular, a challenge arises from its actual implementation [1, 71, 75]. Such challenge may result from the absence of a well-established framework for AM implementation, together with a relatively small number of implementation cases, or the dominance of management approaches based on "reactive" – instead of proactive – ways of avoiding environmental degradation [71, 73]. The analysis of results from monitoring and evaluation of existing marine spatial plans, as well as the definition of strong frameworks for monitoring/evaluation processes are, therefore, necessary to assess MSP successes and failures and to "better inform new and emerging MSP initiatives around the world" [75]. In addition, limitations to AM resulting from the short implementation time of MSP initiatives – and subsequent reduced practice and results from monitoring/evaluation – are expected to be overcome in coming years due to the "broad endorsement of MSP globally" [76].

2.5. Final remarks

Although recognized as an essential tool to implement ocean policies goals, as well as sustainability and EBM approaches, MSP still faces challenges on how to translate principles into practice. In effect, although general discussions on MSP acknowledge it as "necessary, efficient, and useful" challenges still lie "in the process and ability to translate principles, with workable tools and methods, into implementable reality" [77]. Nevertheless, an adaptive, ecosystem-based and integrated approach for the management of human activities in coastal and marine spaces seems to be the best course for MSP to follow. As Young et al. [62] point out: "like good relationships, governance systems [and planning processes] require constant attention and a capacity to adapt to changing circumstances to perform well and to remain

[17] This includes the evaluation of: (1) involvement of relevant stakeholder, (2) validity of data and analyses, (3) consideration of different alternatives, (4) prospective assessment of impacts, and (5) adequacy of human, technical and financial resources.

resilient over time". In accordance, adaptive management is essential to ensure the sustainability of ecosystems, and therefore MSP long-term adequacy, by means of allowing responsible entities to revise, reconsider and redesign their planning and management options along time.

In what regards having soft versus hard sustainability concepts underpinning MSP processes, there are real differences and risks. However, although ecosystem-based MSP (hard sustainability) is more "precautionary", by putting the emphasis in achieving/maintaining ecosystems good environmental status, there is no assurance that it will be more effective than integrated-use MSP (soft sustainability) in delivering sustainable ocean management. Ultimately, it will all depend on how marine planning and management processes are conducted, and how marine ecosystem thresholds are accounted and assessed within such processes.

3 How sustainable is sustainable marine spatial planning? Part II—The Portuguese experience

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3.1. Introduction

Having the second biggest EU's exclusive economic zone (EEZ) [16] and being one of the world's largest maritime nations, Portugal has an important role in the implementation of EU maritime policies. In the Portuguese context, ocean planning and management are presently undergoing major advances. In fact, in less than a decade, two National Ocean Strategies (NOS) have been developed and approved for Portugal – the NOS 2006-2016 [78] and, more recently, the NOS 2013-2020 [79] –, the MSFD was transposed into national internal law [20, 21], two MSFD's strategies were developed for Portugal[18] [22, 23], and the Portuguese government started a marine spatial planning[19] (MSP) process.

MSP, as a "public process of analysing and allocating the spatial and temporal distribution of human activities in [coastal and] marine areas to achieve ecological, economic, and social objectives" [1], has been thoroughly addressed in EU initiatives in the last decade [80] (Figure 3.1), as well as at the national level in several countries (cf. e.g. [10, 11]). In fact, according to

[18] The "continental exclusive economic zone (EEZ) strategy", and the "extended continental shelf strategy". No strategies for the EEZs of the archipelagos of Madeira and of the Azores have yet been published.

[19] Also referred to as *maritime* spatial planning – especially in Europe.

Ehler [12] "MSP is clearly an idea whose time has come". Although MSP is expected to allow for socioeconomic development without compromising the use of resources by future generations, according to Qiu and Jones [59] there are two main "types" of MSP, depending on which sustainability concept underlies the planning process. *Integrated-use MSP*, based on "soft" (or weak) sustainability, that aims to foster economic growth related to maritime sectors in a sustainable way; and *ecosystem-based MSP*, based on "hard" (or strong) sustainability, which has a strong focus on preserving marine goods and services. Although ecosystem-based marine planning and management has been presented as the best way to ensure sustainability of marine ecosystems and the services they provide [1], most European and national initiatives (as it is the case of Portugal) seem to follow an "integrated-use" approach to MSP (e.g. "integrated management", and not "ecosystem-based management", is stated as one of the guiding principles for the recently approved NOS 2013-2020 [79]). Here, two major challenges arise [80]: how to deal with the "risks" inherent to integrated-use MSP, and how to identify "points of no-return" before they are crossed? These issues are addressed in Frazão Santos et al. [80], which reviews the links between sustainability, ecosystem-based management (EBM) and MSP in EU maritime policy initiatives; analyses differences between ecosystem-based MSP versus MSP focused on delivering blue growth; and discusses some of the main challenges found in achieving sustainable ocean management. In effect, such study sets out the framework for the analysis carried out in the present paper.

Given that present and future strategies for the Portuguese maritime space are currently being defined, understanding how the Portuguese MSP process was conducted so far, together with understanding major opportunities and threats to its long-term success, is of the utmost relevance. The present study starts by (1) reviewing the state of affairs on Portuguese MSP, and (2) further analyses and discusses how sustainability concepts have been considered in the Portuguese MSP process, together with major challenges to its long-term suitability and sustainability.

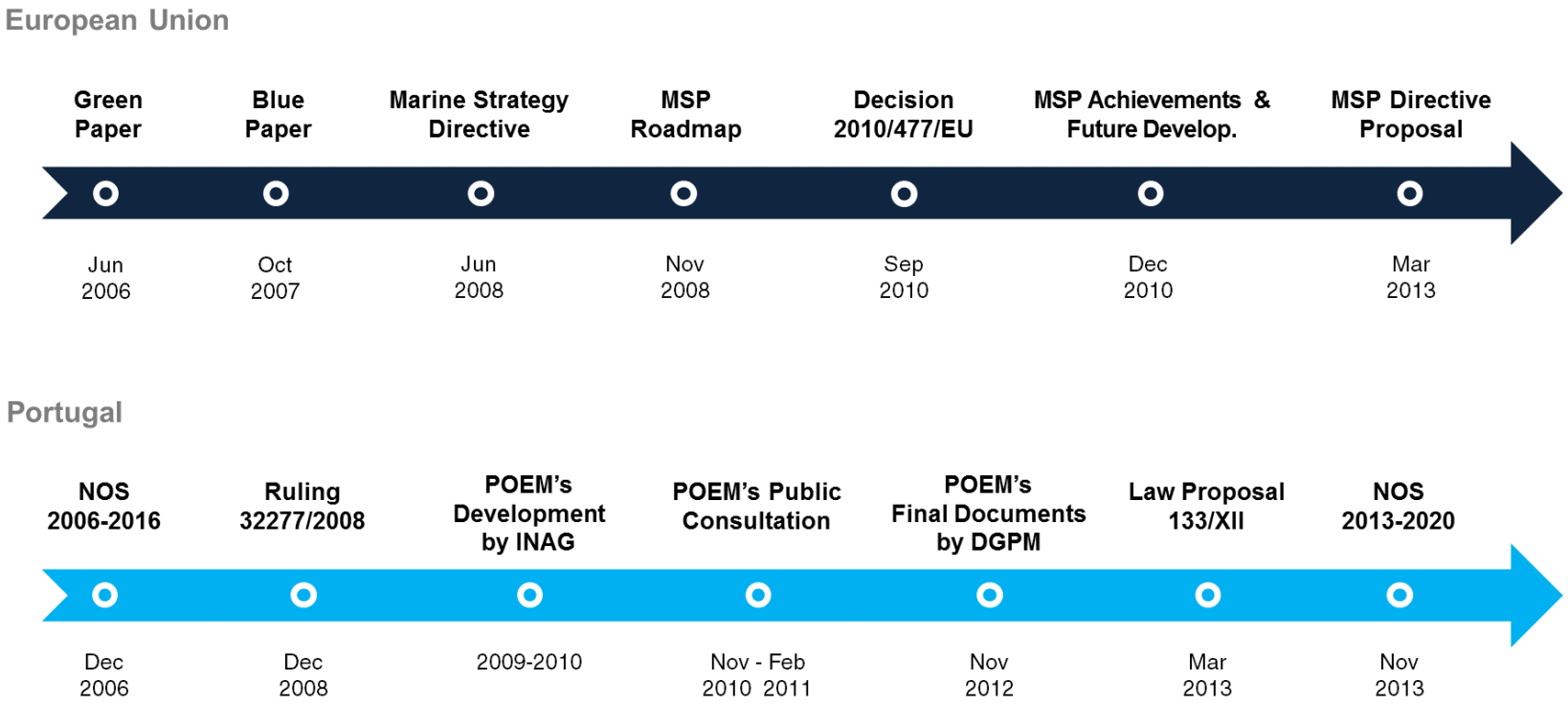

Figure 3.1. Timeline of major maritime policy initiatives addressing marine spatial planning (MSP): at the European Union level (above) and at the Portuguese level (below). NOS: National Ocean Strategy. POEM: Plano de Ordenamento do Espaço Marítimo. INAG: Portuguese Water Institute. DGPM: Directorate General for Maritime Policy.

3.2. The Portuguese MSP process: from the POEM to the Law Proposal

The first Portuguese NOS (NOS 2006-2016), published in 2006, considered MSP as a governance tool essential to ensure truly integrated, progressive and adaptive coastal and marine management, based on the principles of precaution, sustainable development and EBM [18, 26]. In accordance to the NOS 2006-2016 objectives as well as in line with EU maritime policy initiatives (e.g. EU MSP Roadmap [4]), and due to the strategic role and importance of the ocean at a national level[20] [21], in 2008 the Portuguese government established the need to develop a marine spatial plan (Figure 3.1) for all the maritime space under its jurisdiction or sovereignty [26, 28]. This encompasses the water column, seabed and subsoil, from coastal waters (defined by the maximum spring high water tide mark) to the entire Portuguese EEZ, and proposed extended continental shelf. This initiative was entitled "Plano de Ordenamento do Espaço Marítimo" (POEM) and it was designed to analyse the existing and future uses/activities in the Portuguese maritime space according to seven major goals (Figure 3.2). To develop POEM a multidisciplinary team was appointed – consisting of representatives from various ministries, all belonging to the Portuguese Inter-ministerial Commission for Sea Affairs (CIAM)[21] [81, 82] – and the Portuguese Water Institute (INAG) was established as the responsible coordinating entity (Figure 3.2).

Between 2008 and 2010, the multidisciplinary team developed the four main documents that compose the POEM (Figure 3.3): (1) a framework document; (2) the plan's proposal – which includes the allocation of space to different uses (POEM's "spatialization"), management guidelines, an action program, and a monitoring program; (3) the plan's Strategic Environmental Assessment (SEA) report; and (4) the technical rationale and diagnosis report – which encompasses the baseline characterization studies, the strategic framework, the "spatialization" methodology, the data management and mapping methodology, and implications of legislation for MSP (for more information on POEM cf. [27]).

[20] Portugal has one of the world's largest economic exclusive zones, and encompasses two MSFD marine sub-regions.

[21] The CIAM was created in 2007 under the coordination of the Minister of National Defence, with the main purpose of ensuring (1) coordination among ministries; (2) monitoring and evaluation of cross-cutting policies related to maritime affairs; and (3) proper implementation of the NOS 2006-2016. In 2009, the CIAM was reformulated and became chaired by the Prime Minister.

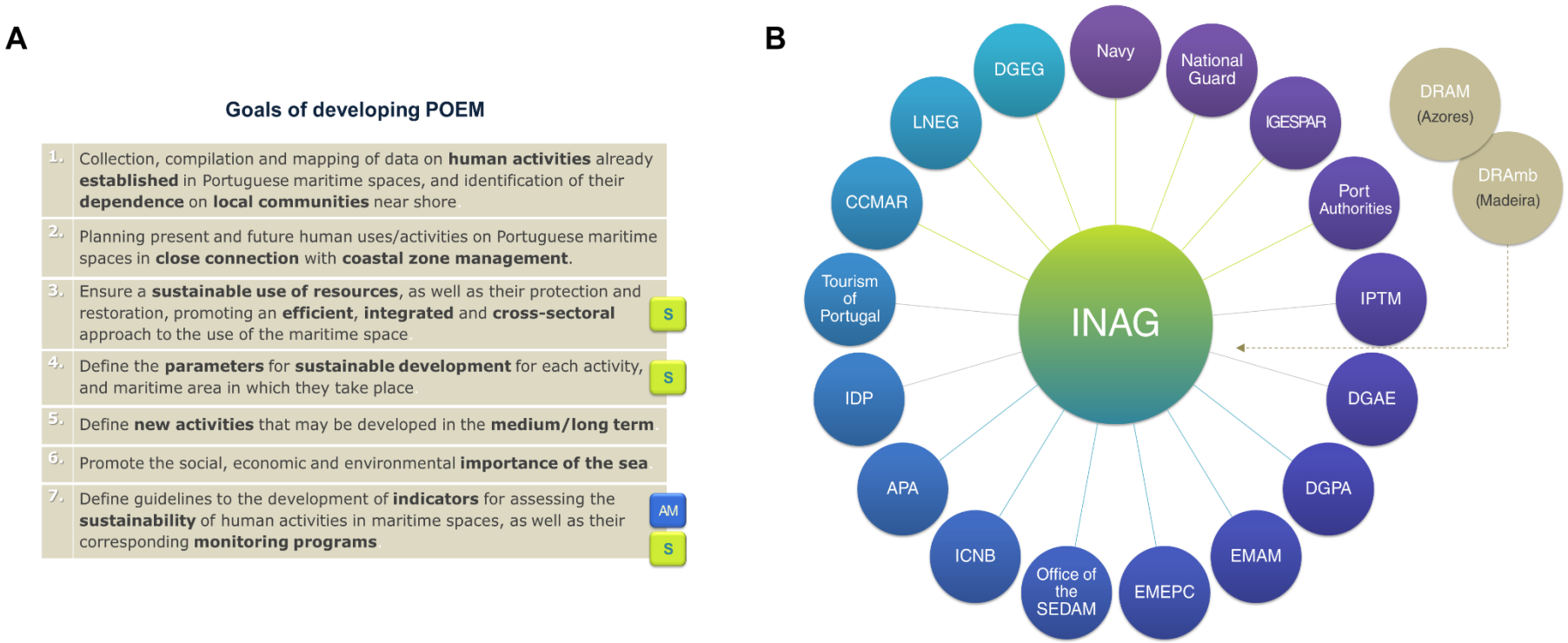

Figure 3.2. (A) Main goals of developing the POEM and (B) Portuguese public entities (circles) that composed the multidisciplinary team responsible for developing the POEM [26]. The Portuguese Water Institute (INAG) was responsible for coordinating the entire process. Grey circles stand for entities from the Azores and Madeira Regions that also incorporated the POEM team. Objectives 3, 4 and 7 are closely related to sustainability issues (S) and objective 7 addresses adaptive management (AM) by referring the need for indicators and monitoring programs. *APA*: Portuguese Environment Agency. *CCMAR*: Centre of Marine Sciences, University of Algarve. *DGAE*: General Direction for Economic Activities. *DGEG*: Directorate-General for Energy and Geology. *DGPA*: Directorate General for Fisheries and Aquaculture. *DRAM* (Azores): Regional Directorate for Maritime Affairs. *DRAmb* (Madeira): Regional Directorate for the Environment. *EMAM*: Task Group for Maritime Affairs. *EMEPC*: Task Group for the Continental Shelf Extension. *ICNB*: Institute for Nature Conservation and Biodiversity. *IDP*: Portuguese Institute for Sports. *IGESPAR*: Portuguese Institute for the Management of National Architectural and Archaeological Heritage. *IPTM*: Institute for Maritime Transportation and Ports. *LNEG*: National Laboratory of Energy and Geology. *SEDAM*: Secretary of State for Defence and Maritime Affairs.

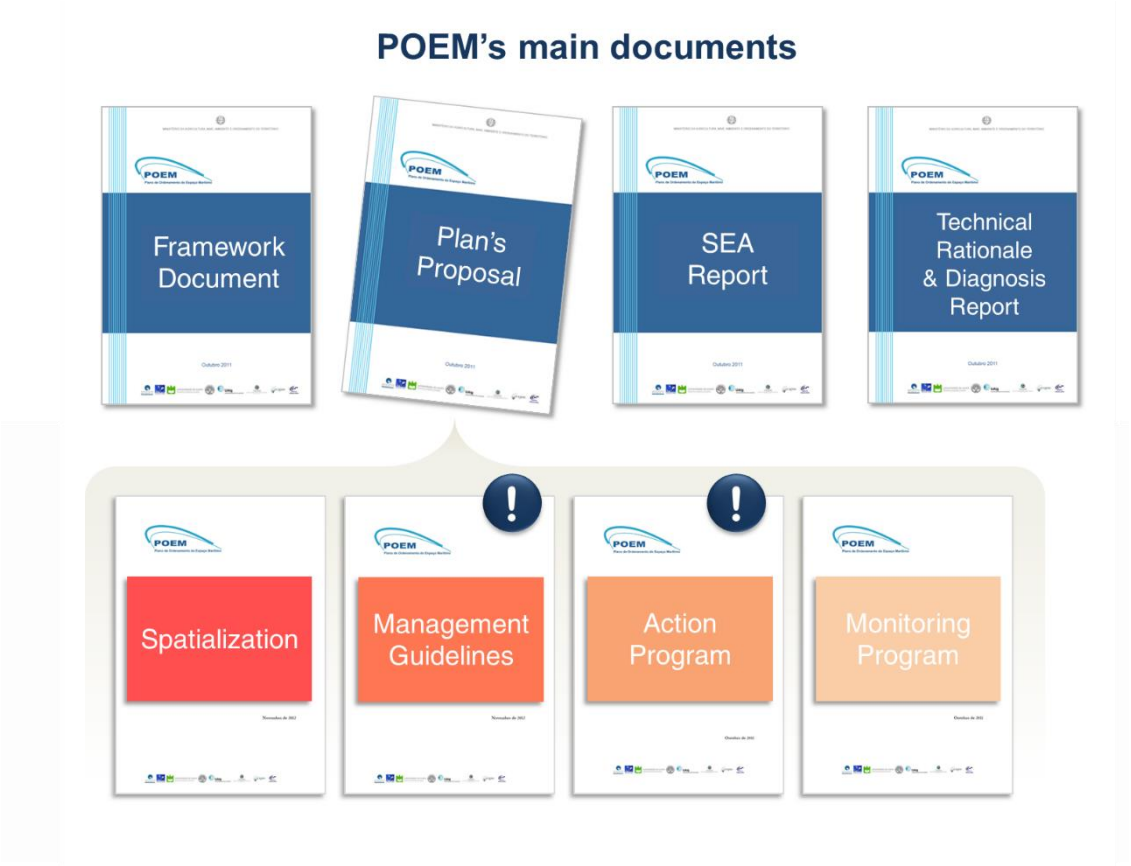

Figure 3.3. Main documents composing the POEM. Documents included in the plan's proposal are highlighted – especially "management guidelines" and "action program" documents – because of their importance for the implementation of environmental sustainability.

Afterwards, for about three months – from November 29, 2010 to February 22, 2011 – POEM's documents were subjected to a public consultation process [83], including seminars, workshops, and specific discussions on particularly relevant topics, such as marine transportation, national security, energy, tourism, fisheries, nature conservation, science and technology.

In the beginning of 2012, following a government change, the Directorate General for Maritime Policy (DGPM) was created [84] and assumed the coordination of POEM's multidisciplinary team. After incorporating relevant changes from the public consultation process, as well as from subsequent meetings of the multidisciplinary team, a final version of POEM was reached. Finally, on November 8, 2012, a government ruling [33] determined that POEM's final documents were to be published in the DGPM website, however without granting POEM the status of a planning/management instrument [27] – in effect, Ruling No.

14449/2012 states that "the work developed by the multidisciplinary team resulted in an unprecedented *study* on the uses and activities that take place in the Portuguese maritime space, which is critical for the future planning and management of such space" [22] [33]. Since the multidisciplinary team was disbanded by the same ruling, DGPM is further responsible for ensuring the update of the POEM "whenever the social, economic, cultural or environmental conditions, or theirs prospects for development, undergo important changes" [33].

Subsequently to the POEM process, between December 2012 and January 2013, the Portuguese government developed proposals for MSP regulations. As a result, in March 26, 2013, a national Law on "marine spatial planning and management" was proposed – Law Proposal No. 133/XII [36]. According to the proposed Law, the main objective of MSP in Portugal is to "*foster economic exploitation* of marine resources and ecosystem services, [while] ensuring compatibility and *sustainability of different maritime uses/activities*, accounting for intergenerational responsibility in the spatial use of national maritime space and *aiming at job creation*" [36]. Environmental concerns are also encompassed in the Law Proposal objectives, however in a less "mandatory" way; in effect, "actions carried under the MSP framework *should* account for preservation, protection and restoration of natural values of coastal and marine ecosystems and the maintenance of the good environmental status of the marine environment" [36].

The link with the POEM is also briefly referred in the proposal introduction. Here, the development of Situation Plans – i.e. spatial planning instruments that identify both (1) protection/preservation areas and (2) the spatial and temporal distribution of uses and activities (present and future) in the maritime space – is expected to build on "*elements* developed by the POEM multidisciplinary team that prove to be necessary and appropriate for an expeditious and rigorous identification of existing uses/activities on the entire Portuguese maritime space" [36].

Between April 2013 and February 2014 the Law Proposal was discussed in detail within the Portuguese Parliament, in the framework of a special Parliament commission (the Agriculture and Sea Commission – Working Group that "establishes the basis for spatial planning and management of the national maritime space") that consulted with relevant national entities

[22] All translations of Portuguese legal documents in this article were made by the authors. Italics by the authors.

involved in ocean and coastal management. In the short term, a final version of the Law is expected to be approved and published[23].

3.3. How is Portuguese MSP considering sustainability?

As discussed in Frazão Santos et al. [80], *sustainability* and *ecosystem-based approach* concepts are thoroughly addressed in MSP literature – in the Portuguese context they have been included in the main objectives of developing the POEM (Figure 3.2). However, understanding how such concepts actually translate into MSP management actions is key to determine how likely they are to being truly implemented in the Portuguese MSP process.

Although Portuguese MSP can be divided in two main phases – (1) the development of the POEM and (2) the development of the national Law on marine spatial planning and management – the following analysis is mainly focused in the POEM phase. This is largely because the Law Proposal No. 133/XII has not been approved yet but also because it is intended to be a "Framework Law", which does not specify operational details. Nevertheless, Andrade et al. [85] carried an analysis of the strengths, weaknesses, opportunities and threats (SWOT analysis) of the proposed Law, and although the results are preliminary, they highlight a number of opportunities and threats to the sustainability of Portuguese MSP (Table 3.1). This preliminary analysis also seems to indicate that soft sustainability is its underlying principle because although the proposal recognizes that EBM should be pursued, environmental concerns seem to come second against economic goals.

[23] After acceptance of the present paper in its final form, the Portuguese Law that lays the foundations for marine spatial planning and management – Law No. 17/2014 – was published on April 10, 2014.

Table 3.1. SWOT analysis of the Portuguese Law Proposal No. 133/XII, on marine spatial planning and management. This analysis is a simplified version of the information discussed by Andrade et al. [85]. MSP: Marine spatial planning. GES: Good environmental Status. ICM: Integrated coastal management. SEA: Strategic environmental assessment.

Strengths	Weaknesses
Enshrines the following principles: ecosystem approach; adaptive management; political sectoral and spatial coherence and coordination; transboundary cooperation and coordination.	Uses some unclear terminology and concepts.
Advocates procedural transparency and information/participation rights.	Assumes the "promotion of economic exploitation (...) of marine resources and ecosystem services" as its main objective, which is not in line with e.g. the MSFD objectives.
Determines that the approval of Allocation Plans[a] is to be preceded by an assessment of their environmental effects (SEA).	No provision is made for the articulation between MSP and ICM.
Upon approval Allocation Plans will immediately integrate Situation Plans[a] (adaptive process).	Limits public participation to the public consultation stage (later and limited stage).
Prioritizes GES by assuming that present/future activities need to ensure it.	Compatibility between different Situation Plans is not ensured.
Establishes regular reporting on the status of national MSP to the Portuguese Parliament (every 3 years).	Ranking and selection of preferred activities is to be done in view of their "greater economic advantage".
Determines that private use always must ensure GES preservation.	Proposed time-span of 75 years for concessions exceeds three human generations, raising sustainability, responsibility and intergenerational equity concerns.
Makes a distinction between entitlement for private use and the right to use/exploit resources in the national maritime space.	Maximum duration of 25 years for a license is more than two times longer than present licenses for use of the Public Maritime Domain[b].
Recognizes the three dimensions of sustainability – economic, social and environmental – under the economic/financial system associated to a private spatial use.	A total of fourteen topics is left for ensuing legislation.
Opportunities	**Threats**
Allows for an integrated vision and implementation of marine spatial planning and management.	The outer limit of the proposed Portuguese extended continental shelf is not yet internationally approved.
Allows for continued compliance with the Law principles (ecosystem approach, adaptive management, etc.) by stipulating that, whenever possible, government action should be in accordance with such principles.	The principle of prioritizing economic activities valorisation may put GES at risk.
Consecrates, in its objectives, intergenerational responsibility in the use of maritime space and in job creation (effective sustainability prospect).	The objective of promoting economic exploitation of marine resources for job creation potentiates subordination of the use of a common (the Portuguese Sea) and its GES to economic/financial objectives.
Assumes the use of existing information thus promoting effective savings of time and financial/human resources.	For the maximum duration of concessions and licenses (75 and 25 years), the systems" natural evolution is likely to hinder (preclude?) benchmarks and baselines.
Promotes the dynamics of maritime activities by allowing interested parties to submit proposals for Allocation Plans.	The lack of a definition for "resources of the national maritime space" leaves entirely open the object of any potential use/exploitation.
Anticipates a revision period for Situation Plans (adaptive management).	The first priority of the law's economic and financial regime is economic sustainability, opening the possibility for subordination of environmental sustainability.
Calls on the development of efficacy/efficiency indicators for an analytical regular reporting on the status of national MSP.	Articulation with other plans affecting the national maritime space is insufficiently addressed.
Contemplates the possibility of new maritime activities, not originally foreseen.	

(a) Allocation and Situation Plans are the two spatial planning instruments considered within the proposed Law: (1) Situation Plans identify the spatial/temporal distribution of maritime activities as well as protection/preservation areas; (2) Allocation Plans establish and allocate specific areas for different uses and activities [36].

(b) The Public Maritime Domain (DPM) is a legal concept that defines the Portuguese *marine waters margin* (including the water column and seabed of coastal waters and territorial waters, coastal waters margins, etc.) as inalienable property of the Portuguese State [86].

An important "sustainability related" specificity of POEM is that ecosystem conservation is treated as one of MSP sectors/pillars, rather than "the one" upon which MSP builds on [27, 28] – thus following a soft sustainability view (cf. e.g. [59, 80]). Nevertheless, the POEM addresses sustainability in an operational way through: (1) the definition of management guidelines for each use-sector; and (2) the establishment of an action program, with a set of operational management measures, or actions, and recommendations that address sustainability issues. According to the SEA report of POEM [87] these two "instruments" are expected to allow the achievement of POEM's general principles – sustainable development, ecosystem-based approach, precaution and prevention, integrated management, adaptive management, strengthening of the economic capacity, technical and scientific support, co-responsibility – thus being of paramount importance.

In the following sub-sections, the major specificities of (1) POEM's management guidelines and (2) POEM's action program will be presented, analysed and discussed.

3.3.1. Management guidelines specificities

Management guidelines in POEM [88] need to be understood as a set of recommendations on how each maritime activity is to be conducted, as well as on how it may be made compatible with the other activities. Due to the place-based nature of maritime activities (i.e. they tend to occur in specific areas), the definition of these guidelines resulted from the way existing/future maritime activities are/will be spread throughout the Portuguese maritime space – POEM's *spatialization* (Figure 3.3) – together with the need to achieve sustainability [88]. In effect, POEM's management guidelines document highlights two direct consequences on marine management from the allocation of space to different uses: (1) in the short-term, future maritime activities, especially the ones related to energy production, are expected to promote a more intense "search for space"; and (2) most activities take place within the Portuguese Territorial Sea (0-12 nmi) or its Contiguous Zone (12-24 nmi), and very few extend to the EEZ's outer limit. Together with the way maritime activities tend to depend on coastal communities and economies [1] this indicates that management guidelines will be needed the most in the area between the coastline and the twenty-four nautical miles off-shore limit.

These management guidelines can be either "general", pertaining to overarching issues common to all activities, or "sectoral" (specific to each use-sector). The first group, of general management guidelines (GMGs), must be observed by all activities taking place in the Portuguese maritime space in order to ensure a sustainable use of resources (see Table S3.1, SM). In fact, GMGs are a means to ensure integrated management of coastal/marine areas and to attain national/international commitments – e.g. OSPAR Convention, Water Framework Directive (WFD), MSFD [88]. By contrast, sectoral management guidelines (SMGs) aim at regulating interactions between activities (either current or future) in order to promote their compatibility and synergies, and minimize conflicts among them. However, not all SMGs address environmental sustainability issues. For that reason, within the context of this study and given its objectives, only SMGs that address interactions between "nature conservation" and other "uses" of the maritime space are analysed and presented in Table 3.2. In fact, the analysis of interactions between e.g. "national security" and "fisheries" falls beyond the scope of this analysis.

Table 3.2. Sectoral management guidelines of the POEM that address interactions between "nature conservation" and other "uses" of the maritime space [88]. Use-sectors are according to Figure 3.4b.

Code	Sectoral management guideline	Use-sector
SMG1	Coast Guard activities may be developed in marine protected areas (due to national security reasons)	National security and defence
SMG2	All actions/plans/projects that might significantly affect nature conservation areas must be subject to environmental assessments/evaluations – Environmental Impact Assessment (EIA) for projects, and Strategic Environmental Assessment (SEA) for programs and plans	Nature conservation and biodiversity
SMG3	The use of marine genetic resources by national/international entities must be subject to Portuguese regulations on the matter	Nature conservation and biodiversity
SMG4	Interventions on the seabed/subsoil must be preceded by archaeological surveys (this includes environmental activities, such as the installation of artificial reefs or garbage collection)	Underwater cultural heritage
SMG5	Fisheries must be managed in line with an ecosystem-based and precautionary approach, to be implemented in compliance with the European Common Fisheries Policy and Portuguese regulations	Fisheries
SMG6	Combining fishing activities and nature conservation in the same area must be pursued (by adopting selective fishing methods and practices that minimize impacts on marine ecosystems)	Fisheries
SMG7	Aquaculture needs to account for its environmental impacts, favour "environmentally friendly" practices, and preserve environmental quality of marine waters (in compliance with the European Common Fisheries Policy and Portuguese regulations)	Aquaculture
SMG8	Combining aquaculture activities and nature conservation in the same area must be pursued (by selecting best production methodologies)	Aquaculture
SMG9	Infrastructure development must consider preservation of important areas for biodiversity/nature conservation	Infrastructures
SMG10	Sediment extraction cannot compromise coastal dynamics equilibrium/protection of coastal systems, and must be preceded by specific technical studies	Infrastructures
SMG11	Changes in maritime activities shall only be implemented in shipping lanes/areas of access to ports after formal authorization from national responsible entities (this includes new requirements/redesign of nature conservation areas)	Navigation
SMG12	Nautical sports within marine protected areas must be integrated in "nature sports charts" (which include rules/guidelines for each sport, allowed areas/time periods, and carrying capacities)	Nautical tourism
SMG13	Wave farms must follow a code of good environmental practice and be in line with guidelines from the OSPAR Convention	Wave energy
SMG14	Planning/implementation of wave farms must include a monitoring program and a contingency plan	Wave energy
SMG15	Wind energy parks must follow a code of good environmental practice and be in line with guidelines from the OSPAR Convention (and other international guidelines)	Wind energy
SMG16	Planning/implementation of wind energy parks must include a monitoring program and a contingency plan	Wind energy
SMG17	Macroalgae cultivation must follow a code of good environmental practice (including the use of native species) and be in line with guidelines from the OSPAR Convention	Biofuels
SMG18	Planning/implementation of macroalgae cultivation areas must be accompanied by a contingency plan and a monitoring program (especially during trial periods)	Biofuels
SMG19	Extraction of geological resources must be subject to EIA and preceded by the approval of a mining plan	Geological resources
SMG20	Geological resources" exploration must follow a code of good environmental practice and be in line with guidelines from the OSPAR Convention	Geological resources
SMG21	Geological resources" commercial exploration cannot compromise coastal dynamics equilibrium	Geological resources
SMG22	Oil extraction must be preceded by EIA and the approval of a "general plan for development/production" (which includes a detailed working plan, safety plan, contingency plan and monitoring plan)	Crude oil
SMG23	Oil extraction shall account for the preservation of living marine resources	Crude oil
SMG24	Science/technology/research are crucial for maritime activities" sustainable development (providing solutions to balance economic growth and nature conservation)	Scientific research
SMG25	Scientific activities need to be assured (especially in areas for collecting long-term data series)	Scientific research

3.3.2. Details of management measures and recommendations

POEM's action program [89] includes a set of "measures" (or management actions) intended to directly contribute to the implementation of the Plan's objectives, as well as a group of "recommendations" that, although not essential, may increase the success of such a task. In order to characterize, and further analyze, how measures and recommendations address sustainability issues, they were "classified" according to (1) POEM's strategic domains and (2) sustainability dimensions.

The POEM has five *strategic domains* [90] – geostrategy, economy, natural resources, knowledge and governance – which are presented in Figure 3.4a. These domains derive from "strategic issues", i.e. "fundamental policy questions or critical challenges" [91], that affect the Portuguese maritime space, and from "critical decision factors" established under the SEA of POEM [87, 90] .

Sustainability dimensions defined in the present study are meant to work as "indicators" of how, and to what extent, POEM's management actions account for environmental sustainability. Three main categories are considered:

- *Ecosystem conservation* (EC) – corresponding to actions that contribute to the protection and conservation of marine ecosystems (e.g. development of MPAs, economic valuation of ecosystem services, assessment of environmental quality);
- *Sustainable use of resources* (SUS) – comprising actions designed to make each use-sector consider "how it affects ecosystem structure, functioning and key processes" and act accordingly to maintain such components of ecosystem health [6] (e.g. pollution control measures, fisheries management measures);
- *Knowledge gathering* on Portuguese marine ecosystems (KN) – which is key for management and may contribute to both ecosystem conservation and a sustainable use of resources.

Because not all measures/recommendations from POEM's action program address sustainability issues, there is a fourth category (*None*) including actions that are not characterized by any of the above sustainability dimensions. Tables 3.3 and 3.4 present measures and recommendations from POEM's action program addressing environmental sustainability issues, according to sustainability dimensions and strategic domains. For more information on measures/recommendations see Tables S3.2 and S3.3 (Supplementary material).

Table 3.3. Measures from POEM's action program addressing environmental sustainability issues [89]. Strategic domains according to Figure 3.4a. EC: Ecosystem conservation. SUS: Sustainable use of resources. KN: Knowledge gathering. (**) Structuring measure.

Code	Measure	Sustainability Dimension	Strategic domain
M1	Development of an "information folder" on the POEM, and of a digital platform	KN	A
M2	Stimulate events related to the oceans (e.g. conferences, congresses, courses)	KN	A
M3	Develop a Fisheries Sector Plan (including the characterization of fishing grounds and definition of guidelines for fishing)	SUS	B
M4	Identify/define areas for sustainable tourism activities (within nature conservation areas), and promote such activities and the involvement of local communities	SUS | KN	B
M5	Identify/map marine species and habitats, and their conservation status, and fulfil knowledge gaps (regarding the MSFD and other international commitments)	EC | KN	C
M6	Identify/design/establish a network of marine protected areas and marine Natura 2000 sites	EC	C
M7	Broaden the scope of the Marine Biodiversity Information System (M@rBis) Program	SUS | KN	C
M8	Create projects/programs that ensure monitoring of the maritime space, its resources and activities (according to MSFD's environmental goals)	EC | KN	C
M9	Put in place a monitoring program on coastal dynamics and establish guidelines for the use of Portuguese coastlines	KN	C
M10	Put in place research/monitoring programs on the influence of geodynamic cycles and climate change in maritime spaces (their resources and activities)	KN	C
M11	Develop specific regulations and Environmental Impact Assessment models for maritime spaces	EC	C
M12	Put in place a national plan to shelter vessels in difficulties (reducing vulnerability to shipping accidents)	EC | SUS	C
M13	Develop studies on economic valuation of marine ecosystems and their services	EC | SUS | KN	C
M14	Develop management plans for marine protected areas (that include ecosystems" value and the identification/promotion of sustainable economic activities)	EC | SUS	C
M15	Anticipate programs for comprehensive surveys on offshore geological resources	KN	D
M16	Develop studies needed to achieve a Good Environmental Status of the marine environment	EC | KN	D
M17	**Stimulate/ensure financial support to research and development programs (on ocean technology/robotics/biotechnology, risk analysis and climate change)	KN	D
M18	Develop research and data collection programs on Portuguese sedimentary basins oil potential	KN	D
M19	Develop knowledge centres, and close connections between companies-research centres and private-public sectors	KN	D
M20	Ensure the implementation and monitoring of the POEM (ensuring sustainable use of resources and sustainable economic activities)	EC | SUS	E
M21	**Ensure involvement of entities responsible for implementing international commitments, ensuring effective articulation among monitoring programs of the MSFD, WFD, Natura 2000 network, OSPAR Convention, etc.	EC | KN	E

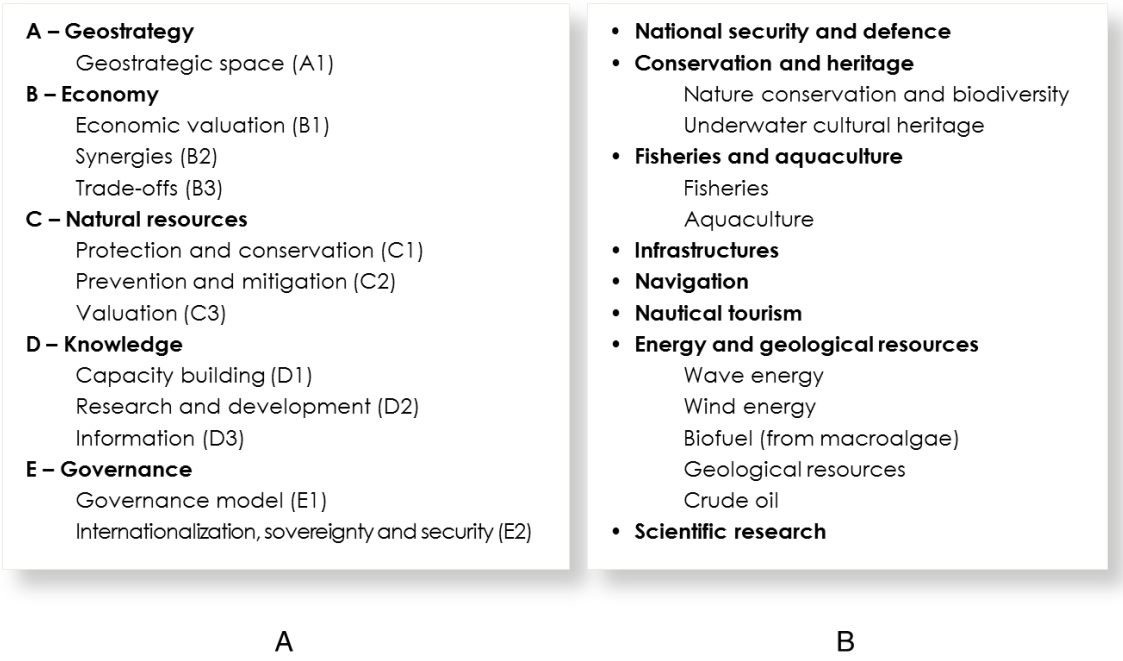

Figure 3.4. (A) POEM's strategic domains (A-E) and corresponding strategic guidelines (A1, B1… E2). (B) Use-sectors considered within POEM's sectoral management guidelines [88]. POEM's strategic guidelines were key to the Strategic Environment Assessment of POEM [90].

Table 3.4. Recommendations from POEM's action program addressing sustainability issues [89]. Strategic domains according to Figure 3.4a. EC: Ecosystem conservation. SUS: Sustainable use of resources. KN: Knowledge gathering.

Code	Recommendation	Sustainability Dimension	Strategic domain
R1	Raise awareness on environmental, economic and cultural value of the marine environment.	EC | SUS | KN	A
R2	Promote sustainable fisheries by applying programs to restructure/modernize fishing fleets	SUS	B
R3	Promote specific programs to support sustainable aquaculture development	SUS	B
R4	Upgrade technologies and activities linked to shipbuilding and to design/production of equipment and information systems, to fulfil the needs of maritime activities (including environmental protection and scientific research)	EC | SUS	B
R5	Promote valuation of fisheries/aquaculture products using certification programs (including certification of sustainable seafood products and sustainable fisheries)	SUS	B
R6	Develop management plans to ensure protection/conservation of marine ecosystems	EC	C
R7	Develop "good practice" guidelines on ecosystem conservation for each maritime use-sector	EC | SUS | KN	C
R8	Develop studies to increase knowledge on marine species/habitats" conservation status, and on impacts from maritime activities	EC | KN	D
R9	Link institutions that study the sea, and develop a database to manage scattered marine information and to enable data sharing/availability	KN	D
R10	Grant entities with proper human, technological and financial resources, especially regarding monitoring/implementation of POEM's action program	EC | SUS | KN	E
R11	Encourage energy production without greenhouse gas emissions	SUS	E
R12	Ensure that maritime surveillance and law enforcement measures minimize the likelihood of environmental threats	EC	E

3.4. Results and discussion

All twenty-five SMGs presented in Table 3.2 are very general and although they identify relevant concerns that, when implemented, may contribute to the long-term sustainability of the Portuguese MSP process, they do not identify "how" to achieve what they propose. Nonetheless, eleven of these SMGs (44%) address specific management instruments that may facilitate the task of ensuring and implementing environmental sustainability: (1) environmental assessments/evaluations – Environmental Impact Assessment (EIA) for projects and SEA for programs/plans; (2) monitoring programs and contingency plans; and (3) codes of good environmental practice (Figure 3.5).

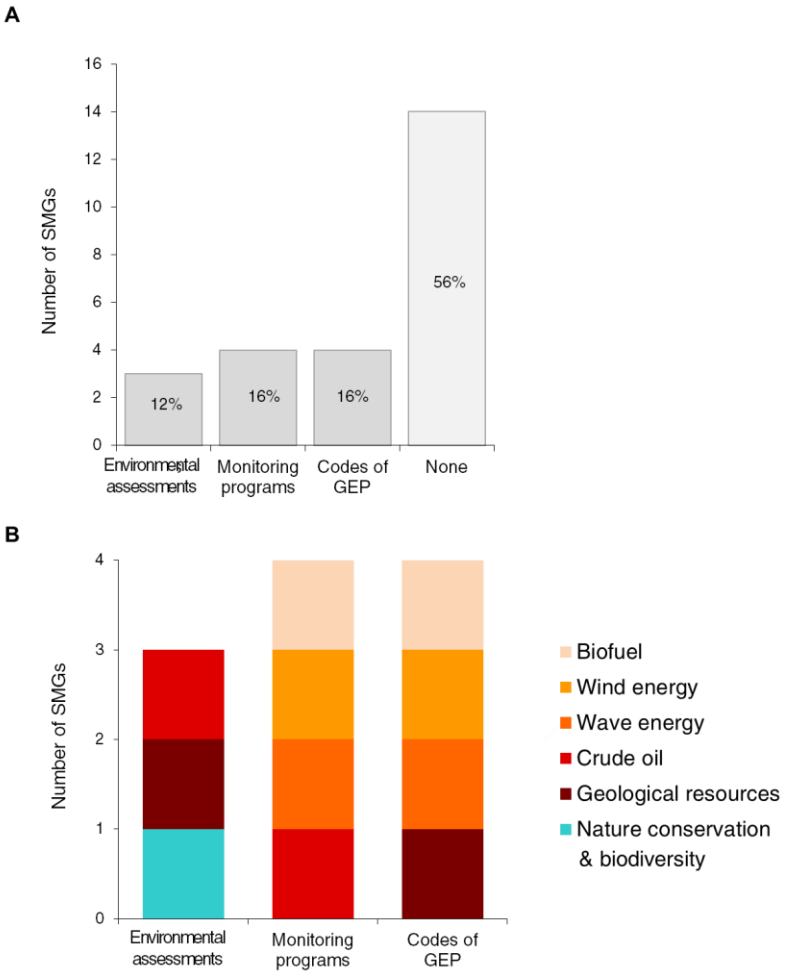

Figure 3.5. POEM's sectoral management guidelines (SMGs). (**A**) Distribution of POEM's sectoral management guidelines according to the operational management instruments they address. (**B**) Detail of the distribution of SMGs addressing at least one operational instrument, according to use-sectors from Figure 4b. GEP: Good environmental practice.

Development of EIAs and SEAs is proposed, respectively, for all projects and plans that might affect nature conservation areas (SMG2 in Table 3.2), and EIAs are proposed for the extraction of geological resources (SMG19) and oil (SMG22). Concomitantly, the development of *monitoring programs* to assess environmental impacts, and of *contingency plans* is required for planning and implementation of wave and wind energy parks (SMG14 and SMG16, respectively), areas for macroalgae cultivation (SMG18) and oil extractions (SMG22). In terms of *codes of good environmental practice*, some activities are specifically advised to follow them, and be in line with guidelines from the OSPAR Convention to minimize hazardous effects in marine ecosystems. In POEM, these are wave and wind energy production (SMG13 and SMG15, respectively), cultivation of macroalgae (SMG17) and exploration of geological resources (SMG20).

In light of such results, the "energy and geological resources" use-sector (Figure 3.4b) seems to be the one for which management guidelines are "most developed". In effect, SMGs in this sector are (almost) the only ones that refer the use of specific management instruments. The only exception is a SMG in the "nature conservation and biodiversity" sector, where environmental assessments/evaluations are required – however, in a very general way – for all projects, plans and programs that might affect nature conservation areas (SMG2 in Table 3.2). A potential issue related to the use of EIAs in MSP, is that these assessments are carried on a "project-by-project" basis, thus not accounting for cumulative effects from different maritime sectors. Such cumulative pressure is especially relevant in marine planning and management because marine ecosystems "move" [92] and there are no real boundaries between maritime areas allocated to different activities. However, because projects derive from plans, and plans should be subject to SEAs, which already encompass an holistic assessment of cumulative effects, such an issue should, therefore, be minimized. Although not referring environmental assessments/evaluations, monitoring programs or codes of good environmental practice, SMGs in the "fisheries and aquaculture" use-sector also recognize the need to adopt best methods and practices to minimize environmental impacts (SMG6 and SMG8 in Table 3.2).

Tables 3.3 and 3.4 present, respectively, the subset of POEM's measures and recommendations that address sustainability issues. These correspond to twenty-one out of the thirty-nine measures of the action program, and twelve out of its twenty-one recommendations (in both cases, over 50%).

The distribution of measures by the three sustainability dimensions considered is unequal, with the *KN* dimension having preponderance over the remaining two (Figure 3.6a and Table 3.3). In effect, while ten measures (c. 26%) concern *ecosystem conservation* (EC: M5, M6, M8, M11-14, M16, M20 and M21), seven measures (c. 18%) pertain to *sustainable use of resources* (SUS: M3, M4, M7, M12-M14 and M20), and fifteen (c. 38%) address *knowledge gathering* on Portuguese marine ecosystems (KN: M1, M2, M4, M5, M7-M10, M13, M15-M19 and M21). In approximately half the cases, however, the same measure is characterized by more than one sustainability dimension (namely, measures M4, M5, M7, M8, M12-M14, M16, M20 and M21). For example, measure M14 – on the development of management plans for marine protected areas – is characterized by dimensions *EC*, as it relates to the establishment of protected areas and management plans for marine ecosystems, and *SUS* because it aims at promoting sustainable economic activities. Likewise, measure M7 – on broadening the scope of the M@rBis Program – is characterized by sustainability dimensions *SUS* and *KN* because it addresses the development of studies/information system on marine ecosystems and biodiversity, and promotes their sustainable use. Only one measure, M13, addressing economic valuation of marine goods and services, encompasses all three dimensions simultaneously.

On the other hand, recommendations (Table 3.4) are distributed relatively equitably by the three sustainability dimensions (Figure 3.6c). Seven recommendations (c. 33%) concern *EC* (R1, R4, R6-R8, R10 and R12), eight recommendations (c. 38%) pertain to *SUS* (R1-R5, R7, R10 and R11), and five (c. 24%) address *KN* (R1 and R7-R10). Here, in a little less than half the cases the same recommendation is characterized by two sustainability dimensions (namely, recommendations R1, R4, R7, R8 and R10). For example, recommendation R7 – on the development of guidelines for good environmental practice – is characterized by dimensions *EC* and *SUS* because it promotes both marine ecosystems preservation and the improvement of environmental performance of maritime activities. Furthermore, three recommendations – R1, R7 and R10 – encompass all dimensions simultaneously.

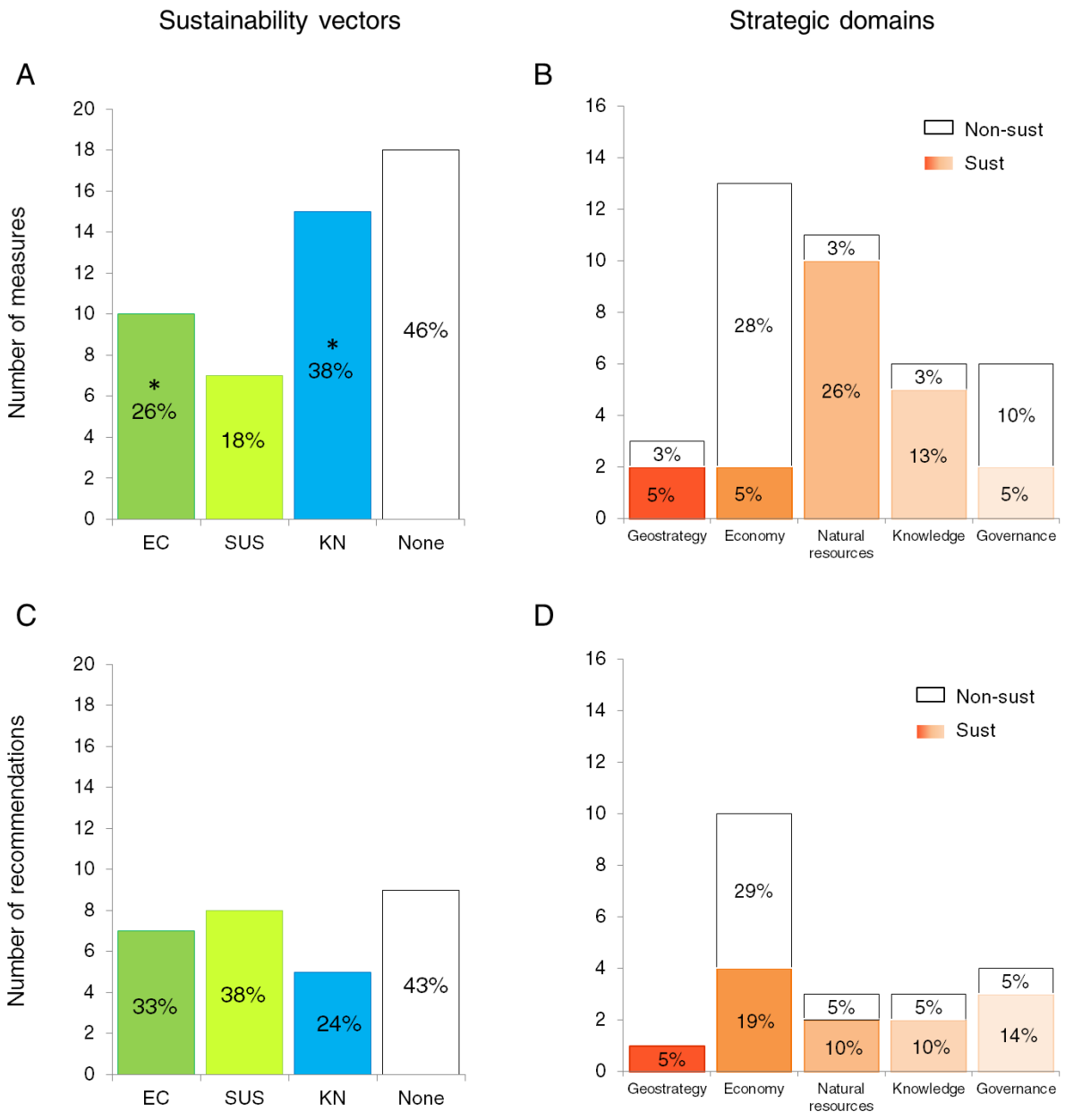

Figure 3.6. Distribution of POEM's measures and recommendations according to (1) sustainability dimensions (A, C) and (2) strategic domains (B, D) – in the latter case, measures/recommendations that do, and do not, address sustainability are differently identified. SUS: Sustainable use of resources. EC: Ecosystem conservation. KN: Knowledge gathering. (*) Encompasses one "structuring measure".

Although there are no "good"/"bad" reference values for each sustainability dimension (they are only intended to categorize POEM measures and recommendations), a scenario where all actions are characterized by the absence (0%) of *EC*, *SUS* or *KN* dimensions would be undesirable. This is not, however, the case as more than half of POEM's measures/recommendations address at least one dimension. On the other hand, just because an action is characterized by a sustainability dimension – i.e. it addresses sustainability issues at least to some extent – there is no assurance that it will actually translate into sustainable management. Nevertheless, phrasing/addressing such environmental concerns is, at the very least, a promising and positive first step. A less "optimistic" – or more precautionary – analysis could also consider the *KN* dimension as a threat to environmental sustainability because we do not know how marine knowledge will in fact be used (in a "worst case scenario" identification and mapping of resources could be used for unsustainable exploitation). However, if risks are real so are opportunities, and knowledge gathering on marine resources is perceived in this analysis as fundamental, contributing both to ecosystem conservation and sustainable use of resources.

When analysing the distribution of measures by POEM's strategic domains (Figure 3.6b), there is a clear predominance of *economy* and *natural resources* domains, each with about one third of the measures – respectively, thirteen (c. 33%) and eleven (28%). When analyzing only the measures that account for sustainability issues, this changes significantly. The *natural resources* domain keeps its preponderance with ten measures (c. 26%), followed by the *knowledge* domain (five measures – c. 13%), while the *economy* domain drops to two measures (5%). This prevalence of *natural resources* and *knowledge* domains may be due to the fact that: (1) long-term protection, preservation and valuation of natural resources, by definition, already encompass sustainability objectives; and (2) increased knowledge and information on marine ecosystems is also recognized as key to achieve environmental sustainability (according to Partidário et al. [87] the importance of knowledge gathering is also translated into SMG24 and SMG25 in Table 3.2).

In contrast, the distribution of recommendations follows a different pattern (Figure 3.6d). Here, the *economy* domain always stands out – ten (c. 48%) of the entire set of recommendations, and four (19%) from the subset that accounts for sustainability issues – followed by the *governance* domain (correspondingly, c. 19% and 14%). In spite of these

figures, there is one recommendation of paramount importance from the *natural resources* domain: R7, on the development of guidelines for good environmental practice for each maritime use-sector (Table 3.4). According to Partidário et al. [87] the action program is silent on establishing sustainability criteria to support maritime activities, and this aspect – which is key for POEM's long-term sustainability – could be compensated by the development of such good environmental practice guidelines. For that reason, recommendation R7 should constitute a measure of key importance to the implementation of POEM's objectives, and not just a "non essential" recommendation [87]. Recommendation R3 – on the investment in new technologies for aquaculture – is also considered by the SEA report as a strategic matter to the sustainability of the fisheries and aquaculture use-sectors, and therefore should also be considered a measure [87].

Finally, among the twenty-one measures that address sustainability issues, only two (c. 10%) are "structuring measures", which means they have priority over the remaining and their implementation must be ensured in the short term (6-12 months): measure M17, on fostering research programs on ocean technology, robotics and biotechnology, thus fulfilling important knowledge gaps; and measure M21, on ensuring an effective articulation among different monitoring programs on environmental quality of marine waters, to be developed in the framework of several international directives (Table 3.3).

3.5. Conclusions

Although recognized as an essential tool to implement EU maritime policies' goals as well as the principle of sustainability, MSP in Portugal still faces challenges on how to translate principles into practice. Regarding the Portuguese Law Proposal on MSP, and although policy decisions are still open for discussion (as it is still a working document), a preliminary analysis seems to indicate that soft sustainability is its underlying principle, as environmental concerns seem to come second against economic goals. However, if an adaptive approach is truly implemented (as suggested in [80]) within the Portuguese MSP process, the spatial planning, management and policy-making of marine and coastal spaces can be continuously adjusted, thus ensuring their sustainability and long-term adequacy. Here, a major challenge and concern is how to ensure the "quality" of indicators and a focus of monitoring programs on the

performance of marine spatial plans – both (1) specific Situation and Allocation Plans [36], and (2) the overall national MSP. In fact, if these indicators are not properly developed and applied their results may be misleading, therefore potentially misinforming the entire management process.

In what concerns the POEM, given that ultimately it was not granted the status of a planning instrument but considered simply as "a study", it is very unlikely that management guidelines, measures and recommendations (Sections 3.1 and 3.2) will ever be implemented "as they stand" – in a worst-case scenario, they could be considered as "failed actions". However, analysing whether or not they contribute to environmental sustainability, and to what extent, is still extremely relevant because in the near future Portugal will need – both to have and to implement – a set of sustainability measures for MSP. And in this context, POEM's documents – which resulted from the joint effort of several entities – may constitute the best basis for drawing up new operational measures. Furthermore, the exact articulation between POEM and the proposed Law is not yet defined, and "new" spatial planning/management instruments (namely, Situation Plans describing the state of present uses of the Portuguese maritime space) may build on POEM according to procedures to be laid down.

Overall, although the POEM sometimes addressed sustainability in a very broad and general manner, not identifying concrete ways to ensure it (e.g. most SMGs), this analysis shows that POEM's *management guidelines*, *measures* and *recommendations* strongly encompass environmental sustainability concerns. In what relates to the "soft sustainability approach" followed by the POEM, although it does not necessarily compromise sustainable development [80], it already arose controversial discussions and might pose additional challenges to the long-term suitability and sustainability of the Portuguese MSP process [27].

Finally, understanding the institutional, political and socioeconomic aspects that hinder the implementation of this type of planning/management processes is a challenge of paramount relevance. In fact, the government change that occurred before the POEM was finalized and approved (and the ensuing change in paradigms/policy perspectives), together with the extinction of POEM's initial responsible coordinating entity (INAG) and creation of a new one (DGPM), and the need for a new legal framework to address marine planning and management

issues[24] (expected to be achieved with Law Proposal 133/XII), certainly contributed to the intricacies of the Portuguese process, whose analysis goes beyond the scope of the present study and will, therefore, be further addressed in future research.

At this moment, new developments on the Portuguese MSP process are awaited expectantly. In fact, once a Portuguese Framework Law on MSP is approved and published, new challenges will quickly arise: the implementation process of planning and management options (e.g. licensing), the proper monitoring and evaluation of individual plans and management strategies, and the revision of the entire process. Only time will tell if, and how, MSP in Portugal will achieve the goals established, especially regarding environmental sustainability. Nevertheless, even though the development and implementation of a proper MSP process poses a national challenge, it is viewed as a major contribution to the improvement of coastal and ocean management at a national level. All things considered, as Ehler [12] points out: "planning for the future begins today" and "avoiding future problems through decisions taken today is a smart way to do business".

[24] According to Calado and Bentz [27] "none of these agencies [namely, INAG and DGPM] has full empowerment to efficiently coordinate all the actions needed to assure a "one-stop shop" for maritime licensing and development".

4 Challenges in implementing sustainable marine spatial planning: The new Portuguese legal framework case

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4.1. Introduction

From the European Union (EU) Green Paper [52] to the recent EU Maritime Spatial Planning Directive [34], marine spatial planning[25] (MSP) processes based on the principle of ecosystem-based management (EBM) have been recognized as a necessary tool to ensure maritime sustainable development. Within this context, Portugal is no exception. Being a large maritime nation and having the potential for its maritime jurisdiction to become even larger[26] (it may soon have around 4 million km^2 of maritime space under its jurisdiction[27]) [17] the need to develop sustainable maritime planning and management processes in Portugal has been gaining increased importance in the last decade. In fact, EBM is commonly identified as a baseline principle both in "strategic" documents, such as the two Portuguese National Ocean

[25] Also referred to as *maritime* spatial planning, especially in Europe.

[26] Portugal has one of the largest exclusive economic zones (EEZ) in Europe, currently with 1.7 million km^2, and in 2009 a proposal for the extension of the Portuguese continental shelf was submitted to the United Nations in order to increase its size by 2.15 million km^2.

[27] According to the United Nations Convention on the Law of the Sea, beyond the 200 nm Portugal only has jurisdiction over the seabed and the subsoil (mineral and other non-living resources, together with living organisms belonging to sedentary species). Superjacent waters remain under international jurisdiction.

Strategies (NOS) [18, 19], and in more "operational" ones, such as the recent Portuguese MSP framework law [29].

Contrary to other EU Member States whose maritime spaces are already under significant anthropogenic pressures and where MSP processes arose as an answer to an existing need (e.g. Belgium [31]), Portugal does not yet have very intense utilisation of its maritime spaces. In fact, most existing activities are limited to its territorial sea (12 nm from the baseline) and most predominant are the "traditional" ones such as fishing, maritime transportation and tourism [28, 32]. Consequently, Portuguese MSP seems to have started under a combination of (1) a "national goal" for the sea (clearly established in e.g. the NOS 2006-2016 and the Strategic Commission for the Oceans Report [18, 93]) which is closely related to a "prospective vision" for oceans use[28]; and (2) European guidelines – such as the EU Integrated Maritime Policy [37] and the EU MSP Roadmap (which encourages Member States to implement national MSP) [4] – and according to the recognition of MSP importance and pertinence at the international level [44].

As discussed in Frazão Santos et al. [64], the Portuguese MSP process has two main phases: (1) the development of the "Plano de Ordenamento do Espaço Marítimo"[29] (POEM), and (2) the development of national legislation on maritime planning and management. The POEM represented the first Portuguese initiative towards MSP at the national level, and its development extended over a period of four years (2008–2012). During most of that period POEM was intended to be the first Portuguese "marine spatial plan", but in the end it was published as a "soft-law" (a "study" on the existing and potential uses and activities in the Portuguese maritime space) [33] thus having no legal or regulatory formal authority.

The development of Portuguese MSP legislation started immediately after the release of the POEM and continues to the present day. In fact, after developing drafts for a MSP framework law, in March 2013 the Portuguese Government presented a proposal to the Portuguese Parliament. This proposal [36] was subject to a parliamentary discussion for almost ten months and, in April 2014, the first Portuguese MSP framework law was promulgated – Law no. 17/2014 [29]. However, as a "framework law" this diploma has a very broad nature and

[28] Namely, the development of new activities such as renewable energy, offshore aquaculture, and geological resources mining.

[29] In English, literally "the Maritime Spatial Plan".

does not specify operational details (it lays the foundations for national maritime planning and management, but without the details of implementation). Also it is not enforceable (cannot be implemented) until the promulgation of subsequent "complementary legislation" [30] – in effect, the MSP framework law leaves a total of thirteen topics to be solved in subsequent legislation, some of them being key points to ensure EBM[31] [29]. A preliminary analysis of the MSP framework law seems to indicate that "soft sustainability"[32] (c.f. e.g. [59, 80]) is its underlying principle (just as in the POEM), because although it recognizes that EBM should be pursued, environmental concerns seem to come second to economic goals [64]. An additional concern pertains to the lack of a broad discussion among stakeholders and the civil society, through a proper public participation process, started at an early stage of the law's development, of a framework law that ultimately deals with a very strong national focus of identity: the sea.

In October 2014, within the six months period established in the MSP framework law for the approval of the subsequent MSP complementary legislation, a proposal of such legislation was broadly approved by the Portuguese Council of Ministers [94] – a Decree-Law project designated as *Reg. DL 319/2014* [95]. Less than three months later, in January 2015, the Portuguese MSP complementary legislation was approved in its final form, and in March 12 it was promulgated with the passing of Decree-Law 38/2015 [30]. Although the document is already promulgated, the possibility of further amendments is still open, by means of a "parliamentary consideration", in March 18, the Parliamentary Group of the Socialist Party formally requested such appreciation [96] [33].

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[30] In Portugal, most laws are passed without the complementary regulations (the rule-making process occurs only afterwards).

[31] For example, in the MSP framework law (1) no provision is made on how the articulation between MSP and integrated coastal management is to occur – although it clearly establishes that there must be an articulation; (2) the articulation between future marine spatial plans and other plans affecting the national maritime space is insufficiently addressed; and (3) the framework for environmental assessment is left to be defined in ensuing legislation.

[32] Soft sustainability (or weak sustainability, as it is commonly referred to in Ecological Economics) allows for compensations among natural, man-made and human capital, provided the system's capacity to supply utility increases overtime. In the MSP context it means that ecosystem conservation is seen as just one of the sectors/pillars upon which MSP builds, and the ultimate goal of MSP is to foster economic growth in a sustainable way.

[33] According to the Portuguese Constitution, because this legislation is intended to "develop" a framework law, the Government has competences to write, approve and send it to promulgation without "running" it

Although legislation is always open to interpretation and the actual implementation of policy and management options may ultimately not follow the letter of the law, for all intents and purposes the MSP complementary legislation *is the legal basis* upon which Portuguese marine planning and management are to be developed and implemented. This means that, at least to some extent, it will significantly affect how MSP in Portugal evolves. For this reason, analyzing and discussing the contents of Decree-Law 38/2015 in order to identify potential weaknesses and risks to environmental sustainability is of the utmost relevance. Concomitantly, because the document is very recent and may still be amended, obtained results might be of use to Portuguese responsible entities[34]. Provided that according to the EU Marine Strategy Framework Directive (MSFD) [41] EBM must be implemented and a "good environmental status" (GES) in the marine environment must always be ensured[35], finding ways to address the challenges of sustainable ocean management is truly fundamental.

The present study starts by (1) briefly presenting the new MSP complementary legislation; (2) then it analyses the document contents (and compares them to the EU MSP Directive contents), namely regarding environmental references; (3) it analyses the potential link between the MSFD and MSP implementation processes in Portugal; and finally (4) it discusses the main challenges and opportunities that this new legal framework poses to the long term sustainability of Portuguese ocean management.

4.2. Brief overview on the new Portuguese MSP Diploma

The Portuguese MSP complementary legislation – henceforth, also referred to as "Diploma" – aims at "developing" (i.e. implementing in detail) the Portuguese MSP framework law, and it does it by defining four main issues[36] [30]. Concomitantly to the regulation of the MSP

through the Parliament. However, the latter may ask for a "parliamentary consideration" of the legislation after it is promulgated.

[34] Results from this study will be provided to Portuguese entities (Parliament and Government) responsible for MSP.

[35] The MSFD aims to promote the improvement of environmental quality through the achievement and/or the maintenance of GES. GES corresponds to an environmental status where marine areas are (1) ecologically diverse and dynamic, (2) clean, healthy and productive (within their intrinsic conditions), and (3) their use is at a level that is sustainable.

[36] These are: (1) the legal framework for national MSP instruments (their development, change, revision and suspension); (2) the legal framework for the private use of national maritime spaces and the associated economic/financial regime; (3) instruments for ongoing monitoring/technical assessment of national MSP;

framework law, the Diploma is supposed to transpose the recent EU MSP Directive [34] into national law, thus placing Portugal among the first European Member States to fulfil such obligation. The MSP Diploma applies to all marine waters under Portuguese jurisdiction, from territorial waters, to the exclusive economic zone, and extended continental shelf – including beyond the 200 nm limit according to the proposal submitted to the United Nations[37]. Throughout its 109 articles it addresses several topics related to the spatial planning and management of the Portuguese maritime space. In order to provide a brief overview on the Diploma, only two aspects will be highlighted in this section: (1) main specificities of MSP instruments, and (2) main specificities of the private use (licensing) of Portuguese maritime space[38].

As it was preliminarily identified in the MSP framework law, the new MSP Diploma comprises two types of national MSP instruments (Figure 4.1), both of them legally binding on public and private entities, and both following six objectives[39] [30]. The first type of MSP instruments, the *Situation Plan*, is expected to lay down the "baseline" for national MSP by identifying the distribution of uses and resources within the Portuguese maritime space. In fact, according to the Diploma this plan includes: (1) the spatial/temporal distribution of existing and potential[40] uses (e.g. aquaculture, fisheries, marine biotechnology, tourism, renewable energy) and associated elements/infrastructures (e.g. pipelines, ports and marinas, artificial reefs); (2) relevant areas for nature conservation, biodiversity and ecosystem services; (3) sites of archaeological and historical interest; and (4) the identification of overlapping terrestrial plans/programs that require an integrated planning. In addition, the

and (4) the legal framework for the private use of water resources for aquaculture purposes in transitional waters.

[37] Exclusively for the private use of water resources for aquaculture purposes, the Diploma applies to transitional waters – e.g. tidal estuaries and brackish water lagoons.

[38] The Diploma also includes, for example, specificities of the economic and financial regime, of procedures for the licensing of Portuguese maritime space, of the private use of water resources for aquaculture purposes and, of enforcement and sanctions.

[39] These are: (1) to implement strategic development objectives established in the NOS 2013-2020; (2) to foster sustainable, efficient and rational economic exploitation of marine resources and ecosystem services; (3) to spatially plan maritime uses; (4) to prevent or minimize potential conflicts between maritime uses; (5) to ensure legal certainty and transparency in the assignment of private use titles; (6) to ensure the use of available information on the national maritime space.

[40] *Existing uses* are the ones already being developed under a private use title, whereas *potential uses* are the ones already identified in the Situation Plan but not yet granted any private use permits.

Situation Plan must also identify protection mechanisms for natural and cultural resources, and "good practice" guidelines for the management and use of the maritime space. Other specificities of this plan include the fact that although it encompasses the entire Portuguese maritime space it can be developed by stages, according to the different maritime areas identified in the MSP framework law; it is subject to environmental assessment (namely, Strategic Environmental Assessment – SEA); it is also subject to a formal public consultation process (where the SEA report has to be made available); and there is an advisory committee[41] to support and monitor the plan's development. Finally, the Situation Plan is expected to be approved (by a Council of Ministers Resolution) within six months after publication of the Diploma.

On the other hand, *Allocation Plans* will identify (and allocate areas to) "new uses" (i.e. the ones not yet included as potential uses in the Situation Plan). Just like the first type of MSP instruments, Allocation Plans must identify protection mechanisms for natural/cultural resources as well as "good practice" guidelines for the management and use of corresponding allocated areas; they must always have an advisory committee to support and monitor their development; they are subject to a formal public consultation process; and they also have to be approved by a Council of Ministers Resolution. As distinctive features, Allocation Plans include a number of characteristics: (1) upon approval they become automatically integrated in the Situation Plan; (2) if a conflict of uses arises between new uses and the ones contemplated in the Situation Plan (either existing or potential) two preference criteria[42] are evaluated in order to determine the prevailing use; (3) they can be developed either by public (government) initiative or by private initiative (in the latter case, interested parties can submit proposals but there must always be a public entity responsible for the plan); (4) in

[41] Composed by representatives from the Ministries/public entities responsible for the sea, for the environment, and for maritime use sectors, together with representatives from interested municipalities and from the Autonomous Regions.

[42] These are: (1) major social and economic advantage for the country (which includes a number of sub-variables); and (2) maximum coexistence of uses (which only applies if the first criteria produces equal results, or it is not applicable). While sub-variables such as "number of jobs created" and "volume of investment" can be easily evaluated (thus being more meaningful for a proper prioritization of activities), sub-variables such as "projected (economic) return" or "contribution to sustainable development" are more subjective and, therefore, less significant.

what concerns environmental assessment, Allocation Plans are considered as projects therefore being subject to the legal framework of Environmental Impact Assessment (EIA) [30].

In regards to the private use of the Portuguese maritime space (defined as "a utilization that requires the reservation of an area or volume [of the Portuguese maritime space] for a use of the marine environment, marine resources or ecosystem services greater than the one obtained by common utilization, and which results in a benefit to the public interest" [30][43]), it has to be assigned through a "private use title", with three types of possible legal permits (Figure 4.1): (1) concessions, (2) licenses, and (3) authorizations. *Concessions* require a continuous use (i.e. over the entire year) of an area and can have a maximum duration of fifty years, while *licences* correspond to an intermittent (or temporary/seasonal) use for periods of less than one year and up to a maximum of twenty-five years. The third type of private use titles, *authorizations*, are specific for scientific research projects and for pilot-projects related to new technologies or non-commercial uses, and they can have a maximum duration of ten years. If the use to be developed is already identified as a potential use in the Situation Plan, the issuing of a use title starts with a request by an interested party (Figure 4.1). However, if the use is not yet included in the Situation Plan, assignment of a use title depends on the previous development and approval of an Allocation Plan[44]. Concomitantly, in order to compensate the benefit resulting from the private use of a "common"[45] – in this case, the Portuguese maritime space – a "utilization tax" (TUEM) is expected to be applied to all maritime activities that imply a private use of the national maritime space under concessions and licenses[46]. Due to their non-commercial nature, private uses developed under authorizations are "free" from such tax.

[43] All translations of Portuguese documents in this article were made by the authors.

[44] The only potential exception are use titles for the development of scientific research activities.

[45] TUEM is also intended to compensate (1) the environmental cost inherent to activities likely to have a significant impact on the maritime space, and (2) administrative costs of spatial planning and management, maritime safety, maintenance and surveillance.

[46] Private uses for the disclosure and harvesting of geological and energy resources, however, are not subject to TUEM.

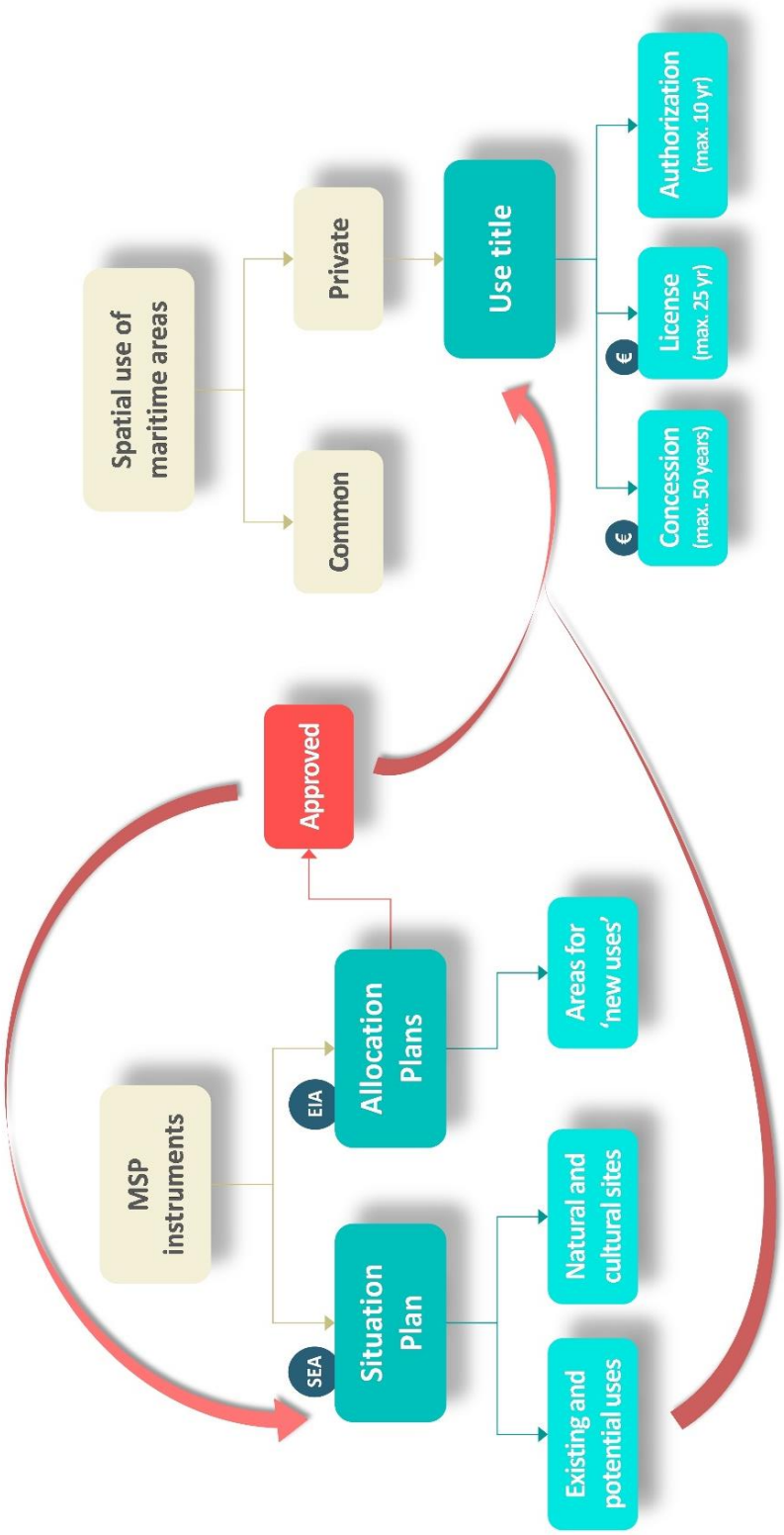

Figure 4.1. Framework for Portuguese marine spatial planning (MSP) instruments and types of private use of the Portuguese maritime space – according to the MSP complementary legislation [30]. The arrows represent the dynamics between both types of MSP instruments (once Allocation Plans are approved they are automatically integrated in the Situation Plan), as well as the link between MSP instruments and private use titles (use titles can be issued either for potential uses already identified in the Situation Plan – at the request of interested parties – or for new uses upon approval of an Allocation Plan). MSP instruments are subject to environmental assessment – Strategic Environmental Assessment (SEA) or Environmental Impact Assessment (EIA). Concessions and licenses are the two types of use titles subject to a "utilization tax" (€).

In what concerns responsible entities, the Portuguese Directorate-General for Natural Resources, Safety and Maritime Services (DGRM) is the entity responsible for the compilation of all MSP instruments (with their full contents, including material corrections, amendments, revisions and suspension) and making them available for consultation to all interested parties, as well as for several aspects regarding the private use of the national maritime space – e.g. DGRM decides upon new applications for private use titles and ensures coordination with other responsible entities whenever a maritime use requires the issuance of additional legal permits[47] (Figure S4.1, Supplementary materials). Concomitantly, the Portuguese Directorate General for Maritime Policy (DGPM) is responsible for promoting ongoing monitoring of both types of national MSP instruments. With that purpose, DGPM must ensure the collection and analysis of relevant data from monitoring of existing maritime activities, and develop regular assessment reports on both the achieved socioeconomic effects (measured against the strategic objectives established in the NOS 2013-2020) and identified environmental impacts.

4.3. Analysing the MSP Diploma contents: finding environmental concerns

4.3.1. Methodology

A content analysis was performed on the MSP complementary legislation [30][48] using QRS NVivo 10 software [97], and results were then used to analyse potential challenges and opportunities to environmental sustainability within the new Portuguese legal framework for marine planning and management. The analysis aimed at identifying two aspects: (1) the frequency of environmental references within the Diploma; and (2) the main environmental topics addressed. With this purpose a "word frequency query" was performed on the entire document, and a list of the 100 most frequent words was produced. Concomitantly, several

[47] Additionally, DGRM is the entity to address in case there is a transmission or abandon of a private use title; may communicate the decision to extinguish a use title in the scope of certain situations (e.g. occurrence of natural causes that jeopardize safety of people, property or the environment); is the entity responsible for the utilization tax's collection; supervises compliance with the rules laid down in the Diploma, and; has responsibilities regarding the improper use of the Portuguese maritime space.

[48] The content analysis was performed on the MSP Diploma in Portuguese. Translation of terms from Portuguese to English was performed only after results were achieved.

"text search queries" on words and terms related to the environment[49] were also carried on the entire document. Here, an analysis of the words' context (environmental vs non-environmental[50]) was performed, together with a quantification of words' frequency in environmental contexts, and a final list of words related to environmental concerns was produced. Regarding the main environmental topics addressed in the Diploma, text search queries (primarily based on the list of words related to environmental concerns) followed by the analysis of automatically produced "word trees" were carried out to determine predominance and context of highlighted topics. Results are presented in Figures 4.2 and 4.3 as well as in Tables 4.1 and 4.2.

In order to properly discuss the significance of obtained results, and because the Diploma is intended to transpose the EU MSP Directive into national law, the content analysis was also performed on the EU MSP Directive [34], aiming at identifying both the frequency of environmental words and the main environmental topics addressed. Results (Figures 4.2 and 4.3; Tables 4.3 and 4.4) were then compared to the ones obtained for the Portuguese MSP Diploma.

4.3.2. Extent of environmental references

As shown in Figure 4.2a and Table 4.1, the ten most frequent words in the MSP complementary legislation (which represent c. 9% of the document total contents, with 1961 references) are: *maritime*, *utilization, national*, *plan*, *space*, *title, article*, *private*, *activity* and *use*. This translates a clear emphasis on the utilization (i.e. development of activities) of the Portuguese maritime space – e.g. the word *utilization* appears 234 times, *activity* appears 152 times and *use* appears 129 times. If the filter is extended to the twenty most frequent words (c. 13% of the total contents, with 2840 references) new words include, for example, *entity*, *area*, *spatial planning*[51], *situation, attribution*, *allocation*, *elaboration* and *public*. In fact, only within the forty most frequent words do the first references to the environment appear: *resources* is

[49] For example, words such as *environmental*, *ecosystem*, *conservation*, *protection*, *sustainability* or *resource*, and terms such as *good environmental status*, *ecosystem-based approach*, *natural value* or *marine environment*. The query criteria included not only "exact matches" but also "stemmed words".

[50] For example, the word *value* appears in the document both in an environmental context (natural value, biodiversity value) and in a non-environmental one (cultural value, economic value).

[51] The Portuguese word for *spatial planning* is a single one: "ordenamento".

the thirty-sixth most frequent word in the Diploma, however with only 50 references, and *sea* is the thirty-seventh with 49 references, both representing under 0.5% of the document content. Within the one-hundred most frequent words only eight other words relate to the environment – *environmental*, *status*, *marine*, *water*, *environment*, *assessment*, *services* and *effects* – and not always in an environmental context[52] (Figure 4.2a and Table 4.1).

In what concerns the specific subset of words related to environmental concerns within the Diploma, the number is down to eighty words (Figure 4.2b and Table 4.2). These correspond to a total of 544 references, representing 2.47% of the document total content. A little over half (c. 53%) of these references correspond to the first eight words already identified, plus the word *coastal*. The following most frequent words are *environment*[53], *hydric*, *natural*, *impact, scientific*, *monitoring*, *protection*, *physicochemical*, *land* and *ecosystem*, which together with the first ten ones compose c. 76% of this subset. The last quarter of environmental references includes words such as *research*, *sustainable*, *value* and *conservation*, while words like *biodiversity*, *ecological* and *sustainability* only appear very rarely (one to two references each), individually representing less than 0.01% of the document contents.

In the EU MSP Directive, the first twenty words include seven words that are also present in the first twenty words of the Portuguese MSP Diploma: *maritime*, *spatial, planning*, *plan*, *article*, *use* and *activity* (Figure 4.2c and Table 4.3). In fact, here the main differences are related to the scope of application of both documents (one being Europe-focused and the other being national-focused).

[52] Differences between environmental and non-environmental references can be estimated by comparing Tables 4.1 and 4.2. E.g. the word *resources* has 50 references in the MSP complementary legislation document (Table 4.1) but only 40 of them corresponding to an environmental context (Table 4.2).

[53] As identified in Table 4.2, there are two Portuguese words for *environment*: "meio" and "ambiente". These were counted separately, and while the first is within the one-hundred most frequent words in the Diploma, the second is not.

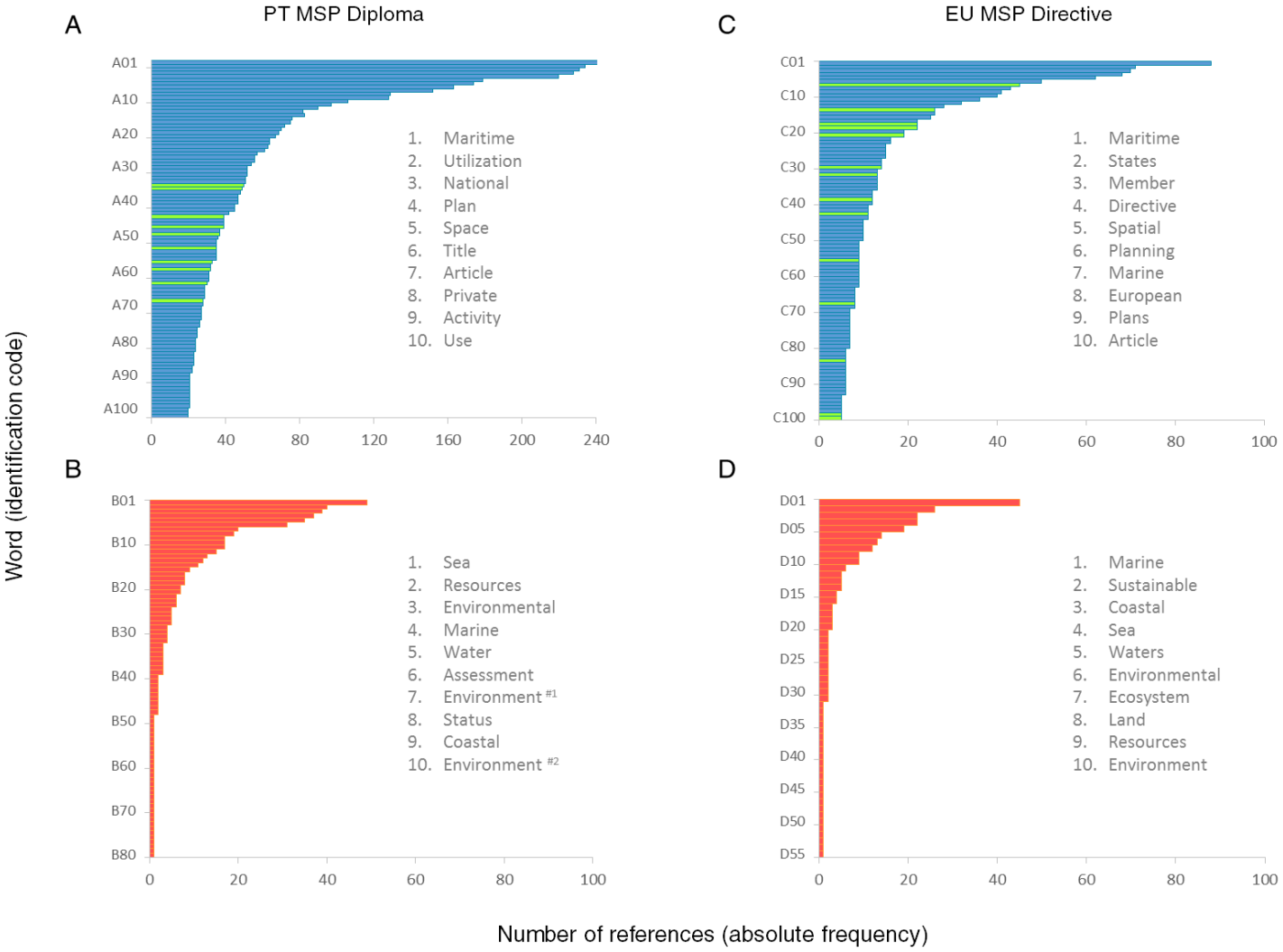

Figure 4.2. Frequency of words for the Portuguese marine spatial planning complementary legislation (PT MSP Diploma) [30] and for the EU MSP Directive [34]: (a, c) distribution of the one-hundred most frequent words; (b, d) distribution of the subset of all words related to environmental concepts. The ten most frequent words of each subset are listed. Lighter (green) bars from graphics *(a)* and *(c)* correspond to words related to environmental concepts that are included in the one-hundred most frequent words. Graphics are based on data from Tables 4.1-4.4. The PT MSP Diploma encompasses a total of 21997 references, while the EU MSP Directive encompasses a total of 5125 references. There are two Portuguese words for *environment* ("meio" = environment #1, and "ambiente"= environment #2), which are considered separately.

Table 4.1. List of the one-hundred most frequent words within the Portuguese MSP complementary legislation (absolute frequency and relative frequency – % of total contents) [30]. Relative frequencies were calculated based on the total frequency of words in the document: 21 997. ID: Identification.

ID Code	Word	Absolute frequency	% of total contents
A01	Maritime*	251	1,14
A02	Utilization*	234	1,06
A03	National*	231	1,05
A04	Plan*	228	1,04
A05	Space	220	1,00
A06	Title*	179	0,81
A07	Article*	174	0,79
A08	Private*	163	0,74
A09	Activity*	152	0,69
A10	Use*	129	0,59
A11	Entity*	128	0,58
A12	Area*	106	0,48
A13	Spatial planning [a]	97	0,44
A14	Situation*	90	0,41
A15	Former*	82	0,37
A16	Attribution*	83	0,38
A17	Number*	76	0,35
A18	Allocation	75	0,34
A19	Elaboration	72	0,33
A20	Public*	70	0,32
A21	Competent*	69	0,31
A22	Deadline*	67	0,30
A23	Decree-law*	64	0,29
A24	Expected*	64	0,29
A25	Case*	63	0,29
A26	Responsible*	61	0,28
A27	Applicable*	57	0,26
A28	Terms	56	0,25
A29	Necessary*	56	0,25
A30	Referred*	54	0,25
A31	Instruments*	52	0,24
A32	Interested*	52	0,24
A33	Procedures*	52	0,24
A34	Government	51	0,23
A35	Provisions-of	51	0,23
A36	Resources*	50	0,23
A37	Sea	49	0,22
A38	Request*	48	0,22
A39	Electronic*	47	0,21
A40	Days*	47	0,21
A41	Respective*	47	0,21
A42	Nomination*	45	0,20
A43	Unique*	45	0,20
A44	Information*	42	0,19
A45	Environmental*	39	0,18
A46	Volume*	39	0,18
A47	One-stop-shop	39	0,18
A48	State/Status [b]	39	0,18
A49	Region*	37	0,17
A50	Marine*	37	0,17
A51	Elements	36	0,16
A52	Change*	35	0,16
A53	Programs*	35	0,16
A54	Water*	35	0,16
A55	Right*	35	0,16
A56	Zone*	35	0,16
A57	Present	35	0,16
A58	Means/Environment [c]	33	0,15
A59	Ambit	32	0,15
A60	Assessment	32	0,15
A61	Proposal*	31	0,14
A62	Territorial*	31	0,14
A63	Next*	31	0,14
A64	Services*	30	0,14
A65	Approval*	29	0,13
A66	Members*	29	0,13
A67	Tax*	29	0,13
A68	Autonomous	29	0,13
A69	Effects*	28	0,13
A70	Conditions*	28	0,13
A71	Transition	27	0,12
A72	Adaptation*	27	0,12
A73	Development	27	0,12
A74	Regime*	27	0,12
A75	Concession*	26	0,12
A76	Safety	26	0,12
A77	Contract*	25	0,11
A78	Title holder*	25	0,11
A79	Consultation*	25	0,11
A80	Structures	24	0,11
A81	Assignment*	24	0,11
A82	Emission*	24	0,11
A83	Norms	24	0,11
A84	TUEM	23	0,10
A85	All*	23	0,10
A86	Economic*	23	0,10
A87	Opinion*	23	0,10
A88	Period*	22	0,10
A89	Spatial	22	0,10
A90	Committee*	21	0,10
A91	Management	21	0,10
A92	License*	21	0,10
A93	Good*	21	0,10
A94	Authorization*	21	0,10
A95	Works	21	0,10
A96	Existing*	21	0,10
A97	Previous*	21	0,10
A98	Year*	21	0,10
A99	Basis*	21	0,10
A100	Advisory	20	0,09

(a) The Portuguese word for *spatial planning* is a single one: "ordenamento".

(b) The Portuguese word "estado" has both these meanings.

(c) The Portuguese word "meio" has both these meanings.

(*) In Portuguese this word is represented by two or more different words (singular/plural, male/female, or a combination of both).

Table 4.2. List of words related to environmental concerns (absolute frequency and relative frequency – % of total contents) within the Portuguese MSP complementary legislation [30]. Presented frequencies correspond only to occurrences where the word appears in an environmental context. Relative frequencies were calculated based on the document's total frequency of words: 21 997. ID: Identification. There are two Portuguese words for *environment* ("meio"= environment #1, and "ambiente"= environment #2) and for *monitoring* ("monitorização"= monitoring #1, and "acompanhamento"= monitoring #2), which are considered separately.

ID Code	Word	Absolute frequency	% of total contents
B01	Sea	49	0,223
B02	Resources*	40	0,182
B03	Environmental*	39	0,177
B04	Marine*	37	0,168
B05	Water*	35	0,159
B06	Assessment	31	0,141
B07	Environment (#1)	20	0,091
B08	Status [a]	19	0,086
B09	Coastal*	17	0,077
B10	Environment (#2)	17	0,077
B11	Hydric*	17	0,077
B12	Natural*	15	0,068
B13	Impact*	13	0,059
B14	Scientific*	12	0,055
B15	Monitoring (#1)*	11	0,050
B16	Protection	9	0,041
B17	Monitoring (#2)	8	0,036
B18	Physicochemical	8	0,036
B19	Land	8	0,036
B20	Ecosystem	7	0,032
B21	Research	7	0,032
B22	Biological*	6	0,027
B23	Sustainable	6	0,027
B24	Preservation	6	0,027
B25	Maintenance	5	0,023
B26	Value*	5	0,023
B27	Species*	5	0,023
B28	Effects	5	0,023
B29	Conservation	4	0,018
B30	Chemical*	4	0,018
B31	Services [b]	4	0,018
B32	Erosion	4	0,018
B33	Climate	3	0,014
B34	Minimization	3	0,014
B35	Nature	3	0,014
B36	Living	3	0,014
B37	Toxicity	3	0,014
B38	Minerals	3	0,014
B39	Safeguard	3	0,014
B40	Biodiversity	2	0,009
B41	Ecological	2	0,009
B42	Sediment	2	0,009
B43	Physical	2	0,009
B44	Substances	2	0,009
B45	Tide	2	0,009
B46	Juvenile	2	0,009
B47	Genus	2	0,009
B48	Fish*	2	0,009
B49	Minimizing	1	0,005
B50	Terrestrial	1	0,005
B51	Protected	1	0,005
B52	Sustainability	1	0,005
B53	Fisheries	1	0,005
B54	Molluscs	1	0,005
B55	Crustaceans	1	0,005
B56	Shellfish	1	0,005
B57	Sedimentary	1	0,005
B58	Beings [living]	1	0,005
B59	Bioaccumulation	1	0,005
B60	Biochemical	1	0,005
B61	Mammals	1	0,005
B62	Mud-clay	1	0,005
B63	Sand	1	0,005
B64	Gravel	1	0,005
B65	Rocks	1	0,005
B66	Solubility	1	0,005
B67	Density	1	0,005
B68	Oxygen	1	0,005
B69	Nutrients	1	0,005
B70	Virus	1	0,005
B71	Bacteria	1	0,005
B72	Yeasts	1	0,005
B73	Parasites	1	0,005
B74	Weather	1	0,005
B75	Nursery	1	0,005
B76	Spawning	1	0,005
B77	Adult	1	0,005
B78	Migration [c]	1	0,005
B79	Oil	1	0,005
B80	Gas	1	0,005

(a) As is "environmental status".

(b) As in "ecosystem services".

(c) As in "migration route".

(*) In Portuguese this word is represented by two or more different words (singular/plural, male/female, or a combination of both).

Table 4.3. List of the one-hundred most frequent words within the European Maritime Spatial Planning Directive (absolute frequency and relative frequency – % of total contents) [34]. Relative frequencies were calculated based on the total frequency of words in the document: 5125. ID: Identification.

ID Code	Word	Absolute frequency	% of total contents
C01	Maritime	88	1,72
C02	States	71	1,39
C03	Member	70	1,37
C04	Directive*	68	1,33
C05	Spatial	62	1,21
C06	Planning	50	0,98
C07	Marine	45	0,88
C08	European	43	0,84
C09	Plans*	41	0,80
C10	Article*	40	0,78
C11	Council	36	0,70
C12	Use*	32	0,62
C13	Parliament*	28	0,55
C14	Sustainable	26	0,51
C15	Union	26	0,51
C16	Relevant	25	0,49
C17	Authorities	22	0,43
C18	Coastal	22	0,43
C19	Sea*	22	0,43
C20	Activities	19	0,37
C21	Waters	19	0,37
C22	Commission	16	0,31
C23	Implementation	16	0,31
C24	Accordance	15	0,29
C25	Competent	15	0,29
C26	Decision*	15	0,29
C27	Region	15	0,29
C28	Aim*	14	0,27
C29	Development	14	0,27
C30	Environmental	14	0,27
C31	Cooperation	13	0,25
C32	Ecosystem*	13	0,25
C33	Existing	13	0,25
C34	Integrated	13	0,25
C35	Management	13	0,25
C36	Order	13	0,25
C37	Account	12	0,23
C38	Areas	12	0,23
C39	Land	12	0,23
C40	Policy	12	0,23
C41	Growth	11	0,21
C42	Process*	11	0,21
C43	Resources*	11	0,21
C44	Strategy*	11	0,21
C45	Apply	10	0,20
C46	Approach	10	0,20
C47	Data	10	0,20
C48	Information	10	0,20
C49	Interactions	10	0,20
C50	Objective*	10	0,20
C51	Authority	9	0,18
C52	Change*	9	0,18
C53	Country*	9	0,18
C54	Economic	9	0,18
C55	Energy	9	0,18
C56	Environment	9	0,18
C57	Framework	9	0,18
C58	Legislation	9	0,18
C59	Public	9	0,18
C60	Regard	9	0,18
C61	Regional	9	0,18
C62	Regulation*	9	0,18
C63	Well	9	0,18
C64	Contribute	8	0,16
C65	Obligation*	8	0,16
C66	Social	8	0,16
C67	Space	8	0,16
C68	Status	8	0,16
C69	Support*	8	0,16
C70	Based	7	0,14
C71	Concerned	7	0,14
C72	Different	7	0,14
C73	Establishing	7	0,14
C74	Europe	7	0,14
C75	Implement	7	0,14
C76	Policies	7	0,14
C77	Provisions	7	0,14
C78	Referred	7	0,14
C79	Stakeholders	7	0,14
C80	Transport	7	0,14
C81	Available	6	0,12
C82	Competence*	6	0,12
C83	Established	6	0,12
C84	Fisheries	6	0,12
C85	Good	6	0,12
C86	International	6	0,12
C87	Law*	6	0,12
C88	Making	6	0,12
C89	Means	6	0,12
C90	Purpose*	6	0,12
C91	Sector*	6	0,12
C92	Tool*	6	0,12
C93	UNCLOS	6	0,12
C94	Action*	5	0,10
C95	Administrative	5	0,10
C96	Appropriate	5	0,10
C97	Best	5	0,10
C98	Between	5	0,10
C99	Climate	5	0,10
C100	Conservation	5	0,10

(*) Word represented by two terms (singular/plural).

Table 4.4. List of words related to environmental concerns within the European Maritime Spatial Planning Directive (absolute frequency and relative frequency – % of total contents) [34]. Presented frequencies correspond only to occurrences where the word appears in an environmental context. Relative frequencies were calculated based on the document's total frequency of words: 5125. ID: Identification.

ID Code	Word	Absolute frequency	% of total contents
D01	Marine	45	0,88
D02	Sustainable	26	0,51
D03	Coastal	22	0,43
D04	Sea*	22	0,43
D05	Waters*	19	0,37
D06	Environmental	14	0,27
D07	Ecosystem*	13	0,25
D08	Land	12	0,23
D09	Resources*	9	0,18
D10	Environment	9	0,18
D11	Status	6	0,12
D12	Conservation	5	0,10
D13	Climate	5	0,10
D14	Ocean*	5	0,10
D15	Natural	4	0,08
D16	Impacts	4	0,08
D17	Effects*	3	0,06
D18	Services	3	0,06
D19	Biodiversity	3	0,06
D20	Assessment	3	0,06
D21	Seabed	2	0,04
D22	Subsoil	2	0,04
D23	Nature	2	0,04
D24	Monitoring	2	0,04
D25	Shoreline	2	0,04
D26	Erosion	2	0,04
D27	Preservation	2	0,04
D28	Protection	2	0,04
D29	Terrestrial	2	0,04
D30	Oil	2	0,04
D31	Gas	2	0,04
D32	Mitigation	1	0,02
D33	Hazards	1	0,02
D34	Precautionary	1	0,02
D35	Healthy	1	0,02
D36	Living	1	0,02
D37	Birds	1	0,02
D38	Goods	1	0,02
D39	Fauna	1	0,02
D40	Flora	1	0,02
D41	Habitats	1	0,02
D42	Islands	1	0,02
D43	Air	1	0,02
D44	Natura	1	0,02
D45	Monitor	1	0,02
D46	Ecological	1	0,02
D47	Resilience	1	0,02
D48	Minerals	1	0,02
D49	Species	1	0,02
D50	Protected	1	0,02
D51	Scientific	1	0,02
D52	Research	1	0,02
D53	Physical	1	0,02
D54	Fisheries	1	0,02
D55	Accretion	1	0,02

(*) Word represented by two terms (singular/plural).

In what regards the subset of words related to environmental concerns, they represent 5.42% of the EU Directive total content (corresponding to a total of fifty-five words and 278 references), i.e. more than two times the value for the Portuguese Diploma. If considering only the words that actually appear in an environmental context, the difference between both documents increases: 4.06% of the EU Directive total content versus 1.27% of the Portuguese Diploma's, i.e. more than three times larger. Even though there is a terminological similarity between environmental words on both documents – e.g. in the first ten environmental words, seven are common to both documents although differently distributed (see Figures 4.2b and 4.2d) – there are two differences that stand out. First, the number and relative frequencies of environmental words. While in the one-hundred most frequent words of the EU Directive there are fourteen environmental words, and over half of these (57%) appear between the seventh and the thirty-ninth rankings (relative frequencies of 0.23-0.88%), in the Portuguese Diploma there are only ten environmental words, and these appear distributed between the thirty-sixth and sixty-ninth rankings, i.e. with much lower relative frequencies (0.13-0.23%) (see Figures 4.2a and 4.2c, and Tables 4.1 and 4.3). Second, the word *sustainable* is highlighted differently in both documents: in the EU Directive it is the fourteenth most frequent word, corresponding to 0.51% of the document content; in the Portuguese Diploma it is not even included in the one-hundred most-frequent words, representing under 0.03% of the document content.

4.3.3. Main environmental topics

The content analysis highlighted seven main environmental topics, as identified in Figure 4.3. Results show that within the Portuguese MSP Diploma there are: (1) 10 references to environmental protection/preservation, (2) six references to sustainability, (3) 12 references to good (environmental) status of marine/coastal environments, (4) 13 references to environmental monitoring, and (5) 22 references to evaluations. An additional "result" is the absence of references to the EBM approach throughout the document and only one reference to the MSFD.

In the EU MSP Directive, references to these topics are fairly different. There are (1) five references to environmental protection/preservation, (2) 24 references to sustainability, (3)

five references to GES, (4) three references to environmental monitoring, (5) two references to evaluations, (6) four references to EBM and (7) six references to the MSFD. In this context, the emphasis in *sustainability* (e.g. sustainable development of marine areas, sustainable use of marine resources, sustainable decision-making) is, once again, clear (making up 49% of the references to environmental topics). Concomitantly, using MSP to apply EBM is also referred in the EU Directive (namely, in the "objectives of maritime spatial planning"; article 5), and the MSFD is directly referred to several times.

The following subsections further present how these topics are addressed in the Portuguese MSP Diploma.

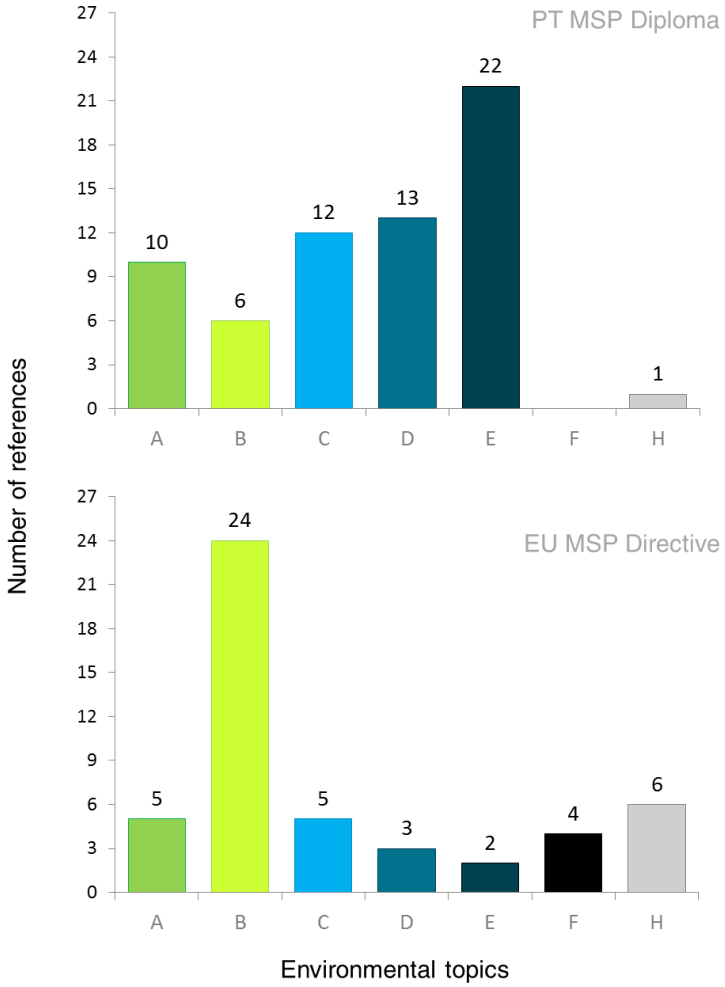

Figure 4.3. Main topics related to environmental concepts (and number of references to each topic) that are addressed in the Portuguese marine spatial planning complementary legislation (PT MSP Diploma) [30] and in the EU MSP Directive [34]. A: Environmental protection/preservation. B: Sustainability. C: Good (environmental) status. D: Monitoring. E: Evaluation. F: Ecosystem-based approach. H: EU Marine Strategy Directive.

4.3.3.1. ENVIRONMENTAL PROTECTION

As for references to *environmental protection/preservation*, they all appear in the scope of MSP instruments. First they arise in MSP instruments objectives: "to foster (…) economic exploitation of marine resources and ecosystem services, *while ensuring preservation, protection and restoration of natural values and coastal and marine ecosystems*" and "to spatially plan uses and activities (…) *with respect for marine ecosystems*"[54] [30]. Second, in the type of information that the Situation Plan must identify: "relevant areas and/or volumes for nature conservation, biodiversity and ecosystem services, namely, sites for the *protection and preservation of the marine environment*, including Special Areas of Conservation, Special Protection Areas (…) and Marine Protected Areas" [30]. Third, related to a type of spatial planning instruments that must be taken into account for the Situation Plan approval or change ("instruments regarding the *protection and preservation of the marine environment* focusing on maritime areas adjacent to the archipelagos"). Fourth, all MSP instruments must include implementation rules regarding mechanisms for the *protection of natural resources*. Fifth, in the context of land-sea interactions: national MSP instruments must ensure their articulation and compatibility with overlapping terrestrial plans/programs and "priority should be given to solutions that (…) ensure the *preservation of marine and coastal ecosystems*" [30]. Also, if a consensus is not achieved in such articulation, the responsible entity may not consider opinions sent by other entities when the *protection of natural resources* is at risk. Sixth, as a "pre-criterion" to the evaluation of conflicts between new uses (established in Allocation Plans) and the ones already contemplated in the Situation Plan: the preference criteria (Section 2) are only evaluated if "identified *singular biodiversity values* (…) are ensured".

4.3.3.2. ENVIRONMENTAL SUSTAINABILITY

References to *environmental sustainability* appear, in most cases, linked to MSP instruments. Just like in references to environmental protection, they appear in MSP instruments objectives (the economic exploitation of marine ecosystems must be *sustainable* and the spatial planning of maritime uses has to ensure *sustainable use of resources*), in the type of information that the Situation Plan must identify ("natural and cultural values of strategic relevance for

[54] Italics by the authors.

environmental sustainability and intergenerational solidarity") and in the context of land-sea interactions ("priority should be given to solutions that establish a *sustainable use* of the space") [30].

Sustainability is also referred regarding aquaculture uses in transitional waters (spatial plans for aquaculture are expected to promote "a *sustainable and integrated management* of the aquaculture activity") and in the preference criteria for conflicting uses (where "contribution to *sustainable development*" is a sub-variable – see Section 2).

4.3.3.3. GOOD (ENVIRONMENTAL) STATUS IN MARINE AND COASTAL ENVIRONMENTS

This topic is referred in different contexts throughout the Diploma. First, in the ambit of MSP instruments objectives: "economic exploitation of marine resources and ecosystem services (…) [has to ensure] the maintenance of *good environmental status* on the marine environment and of *good status* of coastal and transitional waters[55]" [30]). Second, within the main reasons to induce changes in the Situation Plan (the plan is amended "whenever there is a change in environmental conditions, namely observed in the framework of the assessment of *good environmental status* of the marine environment and of coastal and transitional waters"). Third, as a "pre-criterion" to the evaluation of conflicts between new and existing/potential uses: preference criteria are only evaluated if such good status on marine and coastal environments is ensured, otherwise the evaluation does not occur. As for references in the scope of the private use of the national maritime space, they appear: in private use title holders' obligations (they have a duty to "ensure, at all times, the adoption of necessary measures to achieve and maintain" good status on marine/coastal environments); in the main reasons to induce changes in private use titles (whenever there is a degradation on such good status); in the main reasons to dissolve a private use title (due to the need to maintain such good status, whenever the use cannot be relocated neither the title reduced), and; associated to TUEM (one of its components corresponds to uses/activities likely to have

[55] This distinction/specification between "good status" in marine and coastal environments derives from the MSFD and the EU Water Framework Directive (WFD). When referring to environmental quality, the MSFD always addresses "*good environmental status* in the marine environment" while the WFD refers to "*good status* of inland surface waters, transitional waters, coastal waters and groundwater". Because the Portuguese MSP Diploma includes both marine waters and transitional waters (the latter just for aquaculture purposes) the two designations appear in the document.

a significant impact on the maritime space, together with the need of ensuring GES; it is also mandatory that 37.5% of collected taxes are used to financially support actions for the achievement/maintenance of GES on the national marine environment[56]).

4.3.3.4. ENVIRONMENTAL MONITORING

Environmental monitoring is mostly referred regarding the implementation of monitoring programs: in fact, to a set of maritime activities, applications for the issuing of a private use title must include a descriptive and explanatory document including a "proposal for the *monitoring program* to be implemented" and a "contingency and/or emergency plan"[57] [30].

This topic is also referred regarding TUEM. The tax is partially meant to compensate "the need to ensure [environmental] monitoring" and, as stated in Section 4.3.3.3, it is mandatory that 37.5% of collected taxes are partially used to financially support actions to achieving/maintaining GES, which include "*monitoring programs* and measures established in the Marine Strategy Framework Directive's Monitoring Program and Program of Measures"). Finally the topic is addressed in the scope of MSP assessment. The MSP process must be subject to an *ongoing monitoring*; all interested parties have the right to be informed on MSP instruments monitoring; and *monitoring data* is to be used in developing assessment reports.

4.3.3.5. EVALUATION

This is the environmental topic with more references in the Diploma, most of them related to the evaluation of MSP instruments. These include a variety of contexts such as: the right to be informed on, and to participate in *MSP instruments evaluation*; responsibility over MSP instruments' ongoing assessment and evaluation reports; the technical assessment of the MSP process; or the *assessment of GES* within the main reasons to amend the Situation Plan. Particularly important references, however, are the ones regarding *environmental assessments*

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[56] As well as to financially support (1) activities for the improvement of national maritime planning and management, and (2) maritime safety services and monitoring systems (and their maintenance).

[57] This applies to *marine biotechnology*, *renewable and non-renewable energies*, *infrastructures*, *dumping of materials*, and *sinking of ships*. To *aquaculture*, instead of a monitoring program, a "proposal for a self-monitoring program (quantity and quality)" is requested. To the remaining uses identified in the Diploma's annex I (i.e. *mineral marine resources*; *scientific research*; *leisure*, *sports and tourism*; *other industrial uses/activities*) the descriptive document only needs to include a "contingency and/or emergency plan".

– there are five references on the Situation Plan being subject to SEA, and four on Allocation Plans being subject to EIA[58]. As for the assessment of the MSP process itself, references focus on the *technical assessment* of national MSP.

4.3.3.6. EBM AND THE MSFD

Finally, regarding the absence of references to EBM, it must be taken into consideration that the Diploma is an "extension" of the MSP framework law, where EBM is clearly referred to. In fact, according to the MSP framework law, Portuguese maritime planning and management must comply with five main "principles" (in addition to the ones enshrined in the Portuguese Environment Framework Law [98] [59]) and the *EBM approach*, which "takes into account the dynamic and complex nature of ecosystems, including the preservation of a good environmental status of the marine environment and of coastal areas" [29], is the first among them[60]. However, the Diploma does not address "how" to implement the EBM principle, which may be considered as a failure. In addition, because the Diploma (and not the MSP framework law) aims at transposing the EU MSP Directive, and "applying an ecosystem-based approach" when "establishing and implementing maritime spatial planning" is clearly stated in the Directive's first objective [34], this absence of references to EBM is particularly important.

In what concerns the MSFD, the only direct reference found in the Diploma pertains to the MSFD Monitoring Program and Program of Measures, which TUEM is partially meant to financially support. In fact, there are no additional references, for example on the nature of the MSP-MSFD link in Portugal[61]. However, as results from the present study show, references to GES – a MSFD requirement – can be found several times throughout the Diploma, and the

[58] There is also one reference to the "Aquaculture Plan" being subject to SEA, although the Diploma never specifies which type of plan this is.

[59] The Portuguese Environment Framework Law enshrines two types of principles: environmental material principles (sustainable development, intra and inter-generational responsibility, prevention and precaution, polluter-pays, user-pays, responsibility, and recovery), and environmental public policies' principles (mainstreaming and integration, international cooperation, knowledge and science, environmental education, and information and participation).

[60] The remaining principles are: adaptive management; integrated management; valuation of economic activities; and, regional and trans-boundary cooperation and coordination.

[61] On the contrary, in the EU MSP Directive it is stated that "maritime spatial planning will contribute, inter alia, to achieving the aims of (…) Directive 2008/56/EC [the MSFD]".

same applies to the MSP framework law, where references to GES on the marine environment appear six times.

4.4. Finding common grounds with the European Marine Strategy Directive

As mentioned in Section 3.3.6, although the new Portuguese MSP Diploma only includes one direct reference to the MSFD, references to GES on the marine environment can be found several times. The assessment and monitoring of environmental quality of Portuguese marine waters – namely, in the scope of the MSFD – will be crucial to a proper adaptation/adjustment of Portuguese maritime planning and management processes. Hence, a key question is what will be the nature of the link between the MSFD implementation in Portugal and the Portuguese MSP process.

In October 2010, Portugal transposed the MSFD into its national law [20] thus becoming legally bound to implement the EBM principle and to achieve and/or maintain GES in its marine environment [41]. In accordance with the MSFD requirements, between 2012 and 2014 four Marine Strategies[62] were developed and published for the Portuguese maritime space [22-25][63] and, late in 2014, a MSFD Monitoring Program and a MSFD Program of Measures for all four areas were submitted to a public consultation process [99].

From a "theoretical" point of view, MSP has been pointed out as a mechanism – or a "practical approach" – to support EBM and, consequently, to achieve GES and the MSFD goals (e.g. [21, 34, 42, 80]). But different approaches to MSP differently address (or focus on) the importance of maintaining marine ecosystem services and goods. As discussed in [59, 80] there are: "ecosystem-based MSP" processes (underpinned by the concept of "hard sustainability"[64] and putting the emphasis in achieving/maintaining ecosystems GES); and

[62] The MSFD outlines a plan of action that begins with the development and implementation of Marine Strategies for each member state's marine regions/sub-regions followed by the development of a Programme of Measures for such strategies (see Figure S4.2, Supplementary material).

[63] The Marine Strategy for the Continental EEZ (Bay of Biscay & Iberian Coast sub-region) [22], the Marine Strategy for the Extended Continental Shelf [23], the Marine Strategy for the Madeira EEZ (Macaronesia sub-region) [24], and the Marine Strategy for the Azores EEZ (Macaronesia sub-region) [25].

[64] Contrary to the soft sustainability concept, hard sustainability (or strong sustainability, as it is commonly referred to in Ecological Economics) does not allow for compensations among natural, man-made and human capital; it requires natural capital (e.g. marine ecosystem services and goods) never to decrease overtime. In the MSP context it means that ecosystem conservation is the basis or foundation for MSP.

"integrated-use MSP" processes (where soft sustainability is the underlying principle and achieving blue growth is the ultimate goal). In the context of effectively ensuring the MSFD–MSP link, having ecosystem-based MSP processes would be more straightforward because of their natural emphasis on ecosystem conservation. By contrast, when placing a stronger focus on economic growth there is a real risk of underestimating the importance of ecosystem conservation or how close marine ecosystem thresholds might be [80], which ultimately can compromise environmental sustainability. In Portugal (as well as in most European and other countries' initiatives) the MSP process seems to have been focusing on an integrated-use approach [64]. However this does not imply that the Portuguese MSP process will hinder, or will not contribute to, the achievement of GES in national marine waters. What it means is that the environmental sustainability that the MSFD targets is more vulnerable to how marine planning and management processes are conducted, and how marine ecosystem thresholds are accounted and assessed within such processes; and for that reason they need to be carefully monitored.

At the same time, from a more "operational" point of view, the MSFD and MSP seem to share a common need regarding proper communication, articulation and collaboration among involved entities. As stated in [21] "the MSFD implementation success will rely on a *close collaboration, and coherent articulation among all institutions with authority and responsibility that are involved in the process* (...) [namely through] (1) the *identification of authoritative/responsible entities*; [and] (2) the *coordination within and between ministries*" [65]. Concomitantly, the same authors state that "a challenge lies in the ability to translate MSP principles into practice (...). *Coordination and communication among all entities responsible for marine and coastal areas management are required*, although it is not always an easy process especially among already established sectors in the maritime space" [21]. Although ensuring such coordination and communication might in fact be a challenging process (especially when considering pre-established institutional frameworks and dynamics), in this context Portugal encloses an interesting opportunity. In fact, the *same entity* that is responsible for ensuring the

[65] Italics by the authors.

achievement/maintenance of GES in the marine environment – the DGRM[66] [100] – is now also responsible for primarily allowing (and assessing) the licensing of private uses in the national maritime space (see Section 2)[67]. This new and particular institutional framework is, therefore, expected to promote: (1) a sustainable use of Portuguese maritime spaces – because in order to fulfil the MSFD objectives socioeconomic development cannot jeopardize environmental preservation (instead there is a need for a "right mix of protection and use" [45]); and (2) a true coordination/communication between the implementation of MSP and of the MSFD – because the same entity (the same government agency) cannot act inconsistently regarding its objectives, thus behaving as a "bicephalous structure", neither can it prioritize one over the other especially when they both derive from such EU mandatory initiatives as the MSFD and the EU MSP Directive.

Whether or not these "expectations" for Portugal will translate into actual management advantages is for the future to unveil. Nevertheless, a major challenge and concern is how to ensure the quality and fairness of environmental assessments and monitoring programs for both the MSP process and the MSFD implementation. These ongoing assessments need to be properly conducted in order to provide for accurate, and thus significant, results to inform the entire management process. In fact, they will allow for the timely identification of "warning signs" on marine ecosystems health and, therefore, the subsequent adaptation of marine planning and management (which, as stated above, is of especial importance in MSP processes not primarily focused on ecosystem conservation). Moreover, attention should also be paid to minimizing duplication of assessments and reporting from both the MSFD and the EU MSP Directive.

[66] DGRM is the authoritative entity, responsible for coordinating the MSFD implementation at the national level. It has to ensure the achievement/maintenance of GES in national waters in close collaboration with several public entities (see Figure S4.3, Supplementary material).

[67] Only in the MSP complementary legislation was the DGRM appointed with responsibilities regarding the Portuguese MSP process. Until then the DGPM was the single government agency with responsibilities over the spatial planning of the national maritime space [101].

4.5. Discussion and conclusions

The new Portuguese MSP Diploma, a key "piece" of the Portuguese MSP process, includes both opportunities and challenges for the future of Portuguese ocean management and governance. The first environmental concern that emerges from analyzing the Diploma contents regards the possibility of having a predominantly economic-based approach, focused on fostering economic exploitation rather than on properly balancing economics with environmental sustainability. In effect, due to societal pressures (namely, the economic crisis) in recent years Portugal has been focusing more and more attention on the utilization of its maritime space, and references such as "the goose that lays the golden eggs" or "the treasure chest" are easily found referring to the Portuguese sea[68] [102]. The fact that environmental references correspond to only c. 2% of the Diploma contents is in line with this concern[69]. However, which words are used, and where they appear is in fact more important than their number. In fact several important environmental topics are addressed in the Diploma – such as environmental "monitoring" and "evaluation", "good (environmental) status", "environmental protection", and "sustainability". Some of these topics are referred at key points of the Diploma, such as in the objectives of MSP instruments, criteria to prioritize conflicting uses and/or spatial planning instruments, and the type of baseline information that MSP instruments must identify. There also seems to be a clear concern on ensuring that the MSP process includes environmental assessments and monitoring (together these two topics make up more than half of the references to environmental topics in the Diploma – c. 60%) which, as discussed in Section 4.4, are key to the timely identification of "warning signs" on marine ecosystems health, and to an adaptive planning and management. However, ultimately the second objective of Portuguese MSP instruments is "to foster (…) the economic exploitation of marine resources and ecosystem services"[70] and the third objective refers the

[68] E.g. in November 2013 the Portuguese Minister for Agriculture and Sea stated in a public conference that "in the future the sea will certainly be the greatest progression area of our economy (…) the basis for us to explore and exploit the treasure chest that the Portuguese sea is (…) without any doubt the maritime economy will flourish, will grow, and will bear fruit".

[69] The authors recognize that this small percentage is also related to the Diploma having many articles of a predominantly administrative nature. However, so does the EU MSP Directive, where environmental references correspond to c. 5% of the total contents (i.e. more than two times larger).

[70] Although it is stated that such exploitation has to be sustainable and to ensure the preservation of natural values and marine ecosystems.

intention to spatially plan maritime uses in order to increase job creation [30]. These are in line with having an economic-based approach, which is particularly worrying when considering the Diploma's article 104[71], which opens the possibility to exclude an existing and approved MPA, for example, from the Situation Plan, in the light of the national interest (which can easily be focused on primarily solving social and economic problems).

A second environmental concern that emerges from analyzing the Diploma contents has to do with the environmental assessment of MSP instruments. First and foremost, the Diploma opens the possibility of not subjecting the Situation Plan to an environmental assessment, without truly specifying the criteria for such decision – in fact, it just states that such criteria (whichever they are) must be identified[72]. Second, the decision on whether or not to subject the Situation Plan to SEA does not necessarily have to be preceded by a consultation with entities with specific environmental responsibilities (e.g. the Portuguese Environmental Agency, the Institute for Nature Conservation and Forests, and Municipalities [30, 103]) to whom the environmental effects of the plan implementation can be of interest – in effect, such consultation *may* (or not) take place, again without stating the reasons for such decision. Third, in the scope of the environmental assessment framework established in the Diploma, Allocation Plans are to be treated as *projects*, being subject to EIA instead of SEA. This is an odd aspect of the Diploma, because both European and Portuguese legislation on environmental assessment state that *plans* (and programs) must be subject to SEA [103, 104] whereas *projects* must be subject to EIA [105-107]. It is not only the absence of a strategic thinking and a long-term vision (typical of SEA) [91] in the environmental assessment of Allocation Plans that is worth worrying, but also the fact that there is such an incongruence in a key document of Portuguese marine planning and management. As stated by the National Council for Environment and Sustainable Development "although Allocation Plans may

[71] It states that "in case of present or future need (…) regarding the *safeguard of the national interest*, the Government may (in the Council of Ministers ruling that approves or reviews the Situation Plan, or that approves an Allocation Plan) determine the *non-integration* (total or partial) *or the exclusion*" of "*instruments on the protection and preservation of the marine environment*, regarding maritime areas adjacent to the (…) [Madeira and Azores] archipelagos (…) that were approved by the Autonomous Regions government bodies before the entry into force of the present decree-law". Italics by the authors.

[72] The Diploma states that "the elaboration of the Situation Plan is always determined by ruling of the Government member responsible for the Sea, which must specify (…) the plan subjection to environmental assessment *or the reasons justifying the unenforceability of this*". Italics by the authors.

encompass projects (…) [they] must be subject, first and foremost, to the regime of environmental assessment of plans and programs" [108][73]. Fourth, Allocation Plans are (or not) to be subject to environmental assessments in accordance to the corresponding Portuguese legal framework for EIA – i.e. [105, 106]. Such legal framework, however, is neither specific for the marine environment, nor does it cover all the projects that may potentially be developed in the maritime space[74] – namely, some of the uses identified in the MSP complementary legislation. In fact, in the current Portuguese legal framework for EIA, wave parks are not mentioned at all (thus not being legally obliged to it) neither is the exploitation of genetic resources or other marine biotechnology uses. Although this can be solved by a new legal document that adds such specificities to the current legal framework, it still poses a threat (even if just temporary) to sustainable MSP.

A third environmental concern regards the transposition of the EU MSP Directive, as well as the implementation of principles from the MSP framework law. According to the EU MSP Directive, marine planning at the national level must fulfil a set of "minimum requirements", some clearly related to environmental concerns[75] [34], the majority of which are addressed in the new Portuguese MSP Diploma. However, these are addressed in a very broad and vague way. The same applies to four principles from the MSP framework law that are closely related to environmental concerns[76] [29] and whose implementation is only vaguely addressed in the Diploma. Although it is clear that national-level legislation cannot encompass every detailed aspect of operational mechanisms, namely because it has to endure over time and be applicable to different local conditions, it still needs to provide guidance on how the implementation of MSP requirements/principles is to occur – at the very least, it should identify where, and when, such detailed information is to be available. In fact, regarding *land-sea interactions* the Diploma refers that national MSP instruments must ensure their articulation

[73] It is stated in the Diploma that the EIA of Allocation Plans must, however, consider the SEA report previously approved for the Situation Plan.

[74] According to Portuguese legislation, EIA is currently applicable to the following projects: *external (commercial) ports*; *commercial extraction of oil and gas*; *marine oil and gas pipelines*; *marine aquacultures*; *land reclamation*; *oil extraction*; *mineral extraction by marine dredging*; *wind parks*; *coastal protection works*, and; *marinas, recreational ports, and docks*.

[75] These are *land-sea interactions*, *trans-boundary cooperation* and *resilience to climate change impacts*.

[76] These are *EBM approach*, *adaptive management*, *integrated management*, and *trans-boundary cooperation*.

and compatibility with overlapping terrestrial plans/programs but without ever properly explaining "how" to do it. The most operational information on this matter is that Allocation Plans may have priority over pre-existent terrestrial plans/programs[77], and MPAs may be excluded from the Situation Plan. Because integrating land and sea management processes is not only about defining priorities, mechanisms that allow for the synchronization of such processes could be identified (e.g. ICZM). In what concerns *trans-boundary cooperation*, the Diploma only determines that it must be ensured in the development, change, revision and suspension of national MSP instruments, and that transnational issues may be addressed through existing international bodies or regional institutional cooperation. For example, the types of boundaries (or frontiers) that Portuguese MSP must account for could be identified. In this context, Portuguese MSP needs to consider (1) cross-border effects with neighbouring nations (i.e. marine spaces under Spanish/Morocco jurisdiction or, less directly, other countries facing the Atlantic Ocean)[78]; (2) cross-border effects from international waters or "high seas" (in the Atlantic Ocean) and; (3) connection among different fractions of the Portuguese EEZ[79] [109]. Moreover, *resilience to climate change impacts*, an aspect clearly considered in the MSP Directive's objectives, is referred in the Diploma but never truly addressed (it is only stated that economic exploitation should be developed in a way to prevent, and allow for adaptation to, climate change impacts); *adaptive management*[80], one of the MSP framework law principles, is never directly referred to in the MSP Diploma – only two of its "phases" appear, namely, *monitoring* and *evaluation* (see Section 3.3); and, finally, as discussed in Section 3.3, the EBM approach is only addressed in the Diploma through the maintenance of GES.

[77] Portuguese MSP will have to be synchronized with coastal spatial plans (POOCs) and coastal protected areas plans (and in a near future with municipal master plans – PDMs) in order to ensure that main goals and management options are not jeopardized. These pre-existent planning instruments (which are never individually referred to) could be identified in the Diploma.

[78] E.g. decisions regarding shipping routes in the Portuguese EEZ may affect the risk of pollution on Spanish waters or, species depletion outside the Portuguese space may limit recruitment to the national stocks.

[79] Although each fraction has its own environmental, socioeconomic and cultural specificities, MSP main objectives, management guidelines, and monitoring programs need to be in accordance among the three Portuguese EEZ fractions.

[80] Adaptive management is an approach that focuses on systematic learning through experimentation, monitoring and evaluation, and subsequent adaptation of management and policy options based on obtained results.

A fourth and final aspect that may pose additional environmental challenges is the lack of a scientific committee to monitor and assess both the MSP process and MSP instruments. In fact, throughout the MSP complementary legislation, responsibilities over monitoring and evaluations are always attributed to government entities, and external scientific committees are never referred to. As already referred in Section 4.4, MSP assessments need to be properly conducted in order to provide for significant results. Therefore, they must not be biased by the decision-making process. Here, having a scientific committee, external to the entire planning and management process, could provide such impartiality and, therefore, contribute to validate the MSP process. Moreover, government entities could benefit from scientific expertise regarding both data analysis and monitoring tools.

Concomitantly to the environmental concerns discussed in this study, many believe that there are real problems within this legislation (cf. e.g. [110]) and that it would benefit from further discussion, at least within the Portuguese Parliament. Members of the Portuguese Government also seem to recognize the benefits of further discussing the Diploma, as it was stated by the Minister for Agriculture and Sea immediately after the Diploma's approval: "the parliament is also interested in participating in this dialogue through a *parliamentary consideration*, and from the start I expressed the government's interest for this to happen so that this diploma can also[81] be discussed and have a broad consensus within the parliament" [111]. Achieving a broad parliamentary consensus will be crucial for the new Portuguese MSP Diploma's acceptance, allowing it to endure over different legislatures, which is especially relevant given that in October 2015 new legislative elections will take place in Portugal. As well, achieving a broad consensus with other entities and individuals involved in ocean and coastal management is key for the Diploma's long-term efficacy, namely by anticipating situations that can hinder its implementation (e.g. the Regional Government of the Azores has expressed the intention to request a formal examination of the Diploma to the Portuguese Constitutional Court [112]). As stated in Section 4.1, a Portuguese parliamentary party formally request the parliamentary consideration of the Diploma, which is now pending approval [96].

All things considered, if policy decisions are still open for discussion, the MSP complementary legislation has in fact the opportunity to follow a right direction (towards

[81] This is a reference to the Portuguese MSP framework law, which was thoroughly discussed within the Parliament for about ten months in the framework of a parliamentary consideration.

sustainability) and overcome identified challenges/risks (if not, it may end up succumbing to these). In the end, it will all go down to the level of "detailed discussion" that takes place within the Portuguese Parliament (to what extent, and which changes the Diploma will in effect undergo), together with the extent to which an adaptive approach is truly implemented, therefore allowing marine planning, management and policy-making to be continuously adjusted in order to ensure sustainability and long-term adequacy [64].

5 Back to the future in Portuguese marine spatial planning

5.1 Introduction

According to Lieberknecht et al. [113], the analysis of governance systems and the evaluation of their effectiveness are essential parts in the assessment of marine spatial planning (MSP) and marine management processes. By principle a governance, or policy, analysis aims to understand and describe *a process* that is taking place. The aim is not to analyse the *content* of MSP instruments, but to explore the factors that tend to lead to success or failure in MSP initiatives. Policy analysis do this by exploring a number of topics, which commonly include (but are not limited to) the following ones [113]:

- The *entities and individuals* that are involved in the process, together with their roles and relationships, and how the latter change through the process;
- Key factors that affect the process, such as political occurrences – namely, *how* they affect the process and in which ways they are addressed;
- How top-down state control and participative approaches are being used.

According to Olsen et al. [114], a MSP initiative should be based in a comprehensive understanding of the traditions and structures of the existing government system. This is important because "governments hold the primary power and responsibility over the content of an MSP. However, to varying degrees markets and the desires and values of civil society influence the MSP process and its contents (...) [and this] relative influence (...) [depends] upon the governance traditions and the institutions by which influence and authority are exercised" [110]. These authors further state that performing policy analyses can provide an explicit basis for the long-term practice of adaptive management, by learning from experience, as well as

provide a structure that fosters comparative analysis across MSP initiatives and collaborative learning [114]. Establishing governance baselines has two major parts [115]:

1. **"Looking back"** to the past to see how the governance system has responded to changes in ecosystems[82];
2. **"Looking forward"** to the future in order to outline a strategy to deal with the issues identified in *part 1*, and to adapt the long-term goals, near-term objectives and strategies of the MSP initiative.

The *looking back* part is expected to allow for an identification of the strengths and weaknesses of the existing system, and the subsequent necessary changes for future conditions to be achieved, thus paving the way to the improvement the system. This is based on a comprehensive documentation and analysis of the existing governance system. Such documentation is to provide key insights into how present conditions were achieved, therefore placing "current issues and current priorities in perspective" [114].

According to Olsen et al. [114], an important conceptual framework upon which governance baselines tend to rely on is the "policy cycle" – i.e. the sequence of actions that characterize the development of an MSP initiative (Figure 5.1a). The same authors argue that this policy cycle is extremely useful because it helps to identify the factors that enable or hinder the successful transition from the formal approval of MSP to the success or failure of its implementation. It has in fact been widely used in integrated coastal zone management for about two decades now, and in 2009 it was detailed in the UNESCO's document *Marine spatial planning: a step-by-step approach toward ecosystem-based management* [114].

The main objective of this chapter is to develop a **policy analysis on the Portuguese MSP process**, from the beginning of the *Plano de Ordenamento do Espaço Marítimo* (POEM) to the development of the first Portuguese MSP framework law [29] and its complementary regulations [30]. This analysis will be mostly focus on *part 1* of the governance baseline, i.e. it will look back, explore and analyse past events in order to learn on how to best design a "forward looking" MSP initiative. The policy cycle will also be used in order to unravel the aspects that enabled or hindered the success of Portuguese MSP. Using the policy cycle for

[82] According to these authors, such *changes in ecosystems* include the human dimension, encompassing for example changes in *human activities* and changes in *human well-being*, alongside with changes in *ecosystem resilience* and in *ecosystem goods and services*.

the Portuguese MSP initiative is also of relevance because, as it happens for many coastal and marine management initiatives [114], so far there was never a completion of the five mains steps of the policy cycle. Instead, the national MSP process consists of portions of "unconnected" cycles, namely two subsequent initiatives that do not seem to "build strategically on a careful assessment of what can be learned by earlier attempts to address the same or similar issues" (Figure 5.1b).

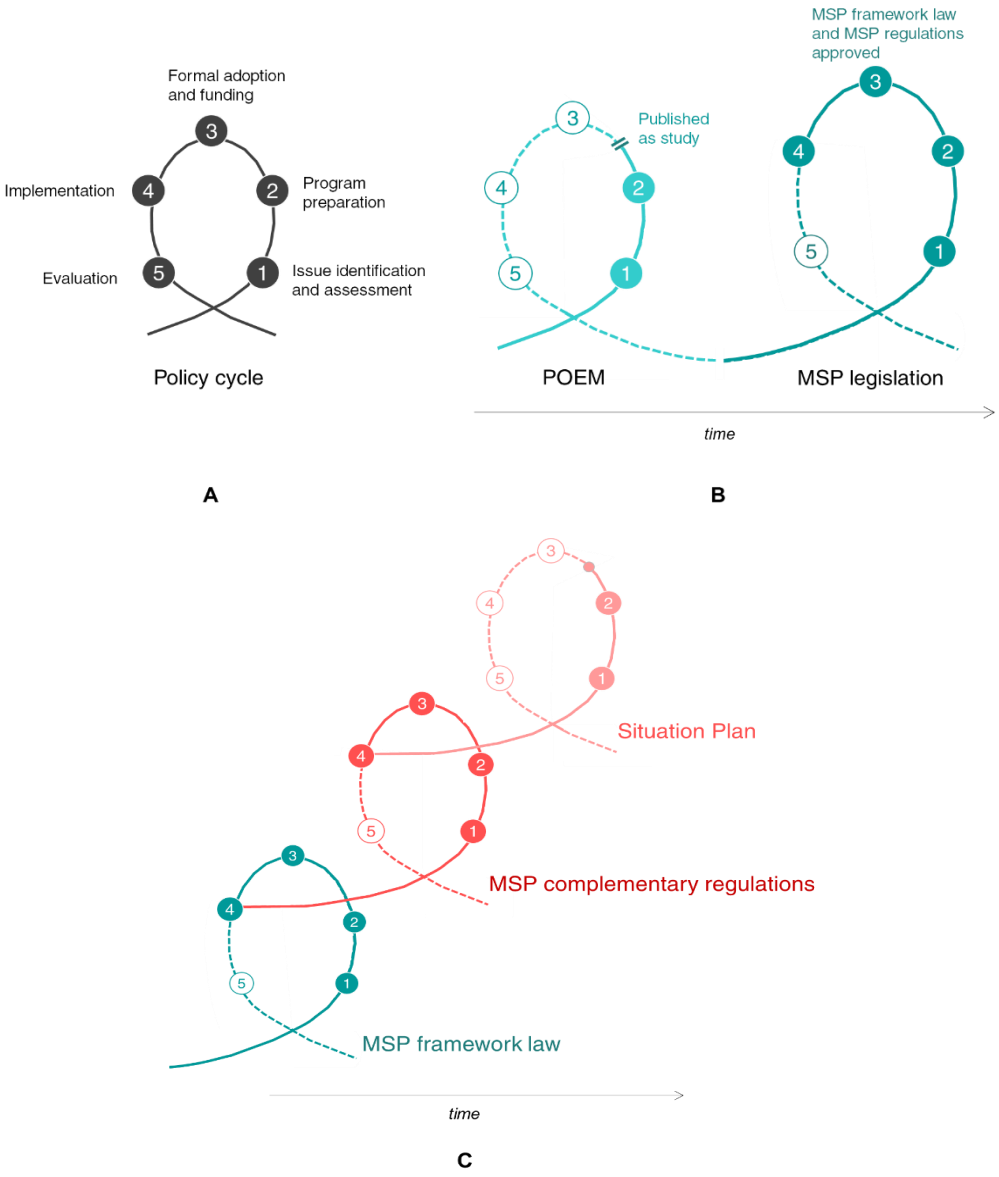

Figure 5.1. The policy cycle. (**A**). The original policy cycle as presented in Olsen et al. [114], with the identification of its five main steps. (**B**) The policy cycle of the Portuguese marine spatial planning (MSP) process, with the first loop representing the POEM initiative and the second loop the development of MSP legislation. (**C**) Detail of how the MSP legislation initiative is to proceed: the MSP framework law is to be implemented (step 4) by MSP regulations, which in turn are to be implemented (step 4) through the Situation Plan; the latter is still under preparation by responsible entities. POEM: *Plano de Ordenamento do Espaço Marítimo*.

The chapter follows the conceptual model presented in Figure 5.2. First, in order to build a comprehensive understanding of the Portuguese MSP process, an information review was undertaken. Building on the information collected from official and unofficial data sources, the two main phases of the Portuguese MSP process – namely, developing the POEM and developing the MSP framework law – were described. From the analysis of this preliminary description, a number of questions that required a more detailed explanation arose. For example: *Why* did the POEM begin? *Why* was the POEM developed as a plan but published as a study? *What* is the expected connection between the POEM and the MSP framework law? *How* was the marine environment considered in the MSP process?

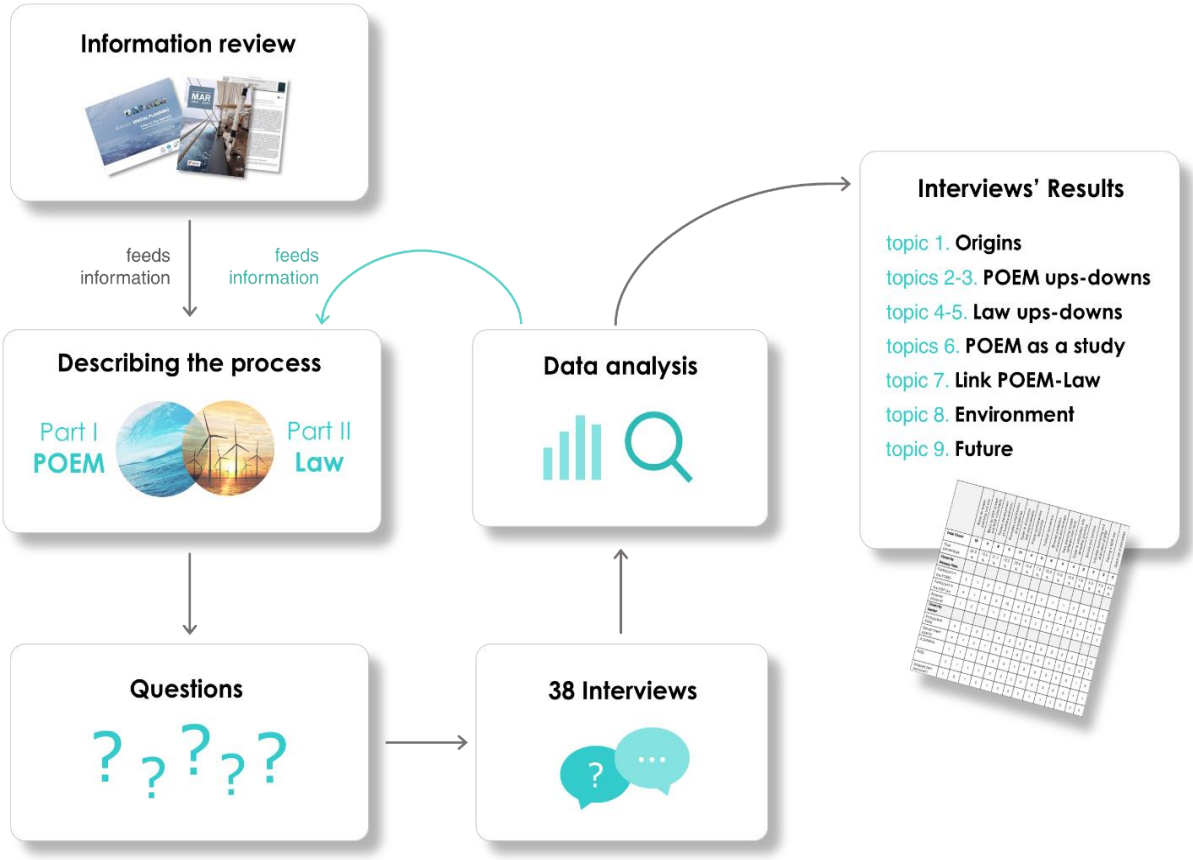

Figure 5.2. Conceptual model of the chapter. POEM: *Plano de Ordenamento do Espaço Marítimo*. Law: Portuguese Law No. 17/2014 on marine planning and management.

In order to gather further information to properly answer these questions, and recognizing that some relevant aspects are not available from official data sources, an interview script was developed and a set of formal semi-structured interviews was conducted. Data collected through the interviewing process was compiled and analysed, and results were organized into nine topics, as presented in Figure 5.2. Information from interviews served an additional purpose by providing new material to complement the description of the Portuguese MSP process, with additional data sources being further consulted to support it. The next section addresses in more detail methodological aspects of both the literature review and the interviewing process.

5.2. Methodology

5.2.1. Information review

The literature review of national and international documents on MSP included (but was not limited to) the following ones:

1. **National ocean policy documents** – such as the Portuguese National Ocean Strategies 2006-2016 and 2013-2020, the Strategic Commission for the Oceans Report, and the COTEC Blue Growth Report [18, 19, 32, 93];
2. **International ocean policy documents** with implications for Portugal – e.g. EU Green Paper, EU Integrated Maritime Policy, EU MSP Roadmap, EU Marine Strategy Framework Directive (MSFD), and EU MSP Directive [4, 34, 37, 41, 52];
3. **Documents that compose the POEM** (11 main documents, organized into 4 main volumes, plus summary reports such as the POEM Synthesis Report and the non-technical version of the Environmental Assessment Report[83]), together with its initial drafts, official meetings minutes, and related legislation (e.g. [26, 28, 33, 83, 87-90]);
4. **The Portuguese MSP framework law**, as well as its initial drafts, official written opinions from several entities, and other official documents available at the Portuguese Parliament website[84] (e.g. [29, 36, 108]);
5. **Scientific papers** on Portuguese ocean policy, planning and management (e.g. [21, 27, 64, 77, 110, 117-120]);

[83] More information in Section 5.3.1.

[84] At the *Legislative Initiative of Law Proposal No.133/XII* webpage [116].

6. **Academic thesis** on Portuguese ocean policy, planning and management;
7. **Newspaper articles** and other **working papers** on Portuguese ocean policy, planning and management.

Besides the literature review, information was collected from two additional sources. First, the **audio files of all parliamentary hearings** that pertain to the discussion of Law Proposal No. 133/XII[85] were analysed in detail. This is the draft for a MSP framework law, which was presented by the Portuguese Government to the Parliament in March 2013. Second, there was a *direct observation* of the process, by **attending meetings on Portuguese MSP** conducted from November 2011 to April 2016, such as closed meetings, public debates, seminars and conferences.

5.2.2. Interviews

The rationale for conducting a set of interviews was the need to explore and unravel those institutional, political and socioeconomic aspects that are not identified in available literature but that are essential to understand what enabled or hindered the outcomes of a management process (as mentioned in the end of Chapter 3). At the same time, it was extremely relevant to understand the perception of key informants involved in, or knowledgeable of, the process on what were the major strengths and weaknesses of the Portuguese MSP initiatives. Based on the initial information review, a set of key questions were therefore compiled. The full interview scrip is available in Table S5.1 (Supplementary material – SM). However, the most relevant questions of the interview, and the ones that will be further addressed in the results section in this same order[86], are the following ones:

- Question 1a – What triggered the development of MSP in Portugal?
- Question 2a – What are the main benefits or advantages of the POEM?
- Question 2b – What are the main disadvantages or limitations of the POEM?
- Question 3a – What are the main benefits or advantages of the MSP framework law?

[85] Available at the *Agriculture and Sea Committee, Working Group for Marine Planning and Management* webpage [121].

[86] Questions 4a, 4b, 4c and 4d are all addressed within the same sub-section of results. Each of the remaining questions corresponds to an entire sub-section.

- Question 3b – What are the main disadvantages or limitations of the MSP framework law?
- Question 2f – Why was the POEM developed as a plan but published as a study?
- Question 3f – What will be the link between the POEM and the MSP framework law?
- Question 4a – What is the importance of the environment for MSP?
- Question 4b – What is your opinion on the ecosystem-based approach?
- Question 4c – How is environmental sustainability considered in the POEM?
- Question 4d – How is environmental sustainability considered in the MSP framework law?
- Question 5a – What will be the future major challenges in implementing MSP in Portugal?

The interviews used a semi-structured format, therefore following the interview script but still allowing conversations to depart from it whenever relevant themes or personal experiences were introduced [122]. In fact, in semi-structured interviews the script intends to be a "guideline", i.e. a list of questions and topics that need to be covered in a particular order, but which may be supplemented with additional questions as the interview progresses [122].

Interviews took place from October 2013 to June 2014, and for that reason while a number occurred before the publication of the final version of the MSP framework law – in April 10, 2014 – others were conducted afterwards[87]. A total of thirty-eight formal semi-structured interviews were conducted with a group of key informants from the Portuguese MSP process. The original list of informants (n=35) was established using a *purposive sampling technique*. In purposive sampling, a purpose is defined and informants are selected to serve that purpose [122]. Because here the purpose was to collect inside knowledge on the Portuguese MSP process, informants were selected based on acknowledged formal participation in the process, plus expert recommendation[88]. From this original list, 29 informants positively answered the invitation to participate in the study (c. 83%), while the remaining 6 either declined the invitation or did not reply. An additional set of informants (n=13) were identified using a *snowball sampling technique* during the interviewing process. Snowball sampling is a network sampling method where key informants are used to identify and recommend one or two people from a "population" – in this case, participants in the MSP process – to be

[87] The first thirty-three interviews were conducted up to April 9, 2014, while the remaining five occurred between April 11 and June 19, 2014.

[88] A senior government agency representative, and former member of the POEM coordination, provided advise on this matter.

interviewed [122]. These are then asked to list others in the population, and the sampling frame grows with each interview until no new names are offered [122]. Here, the positive response rate was c. 85%, although two scheduled interviews ended up not taking place after several attempts to reset the date.

The identity of informants is kept anonymous throughout this study. However, individual quotes are used in the text (after being translated to English, given that interviews were conducted in Portuguese) to emphasise expressed opinions. To keep their anonymity but yet provide relevance and reliability to their statements (and consequently to the study itself) informants are broadly characterized using two variables, and corresponding subcategories:

1. **Role played within the Portuguese MSP process:**
    a. **Participant in the POEM** development – this includes members of the multidisciplinary team, coordination team, and strategic environmental assessment (SEA) team of the POEM[89];
    b. **Participant in the MSP framework law** development – including law developers, members of the Agriculture and Sea Committee, and individuals consulted in the parliamentary hearings[90];
    c. **External observer** – individuals linked to ocean planning and management that did not actively participate in the Portuguese MSP process, but who closely followed it.

2. **Type of organization informants represent:**
    a. **Portuguese State** – interviewed members of both the Portuguese Parliament and the Portuguese Government;
    b. **Government agency** – representatives from several government agencies;
    c. **Non-governmental organization** – representatives from different NGOs, both environmental and economic;
    d. **Academics** – professors and researchers;
    e. **Independent consultants** – individuals not linked to any specific institution.

[89] For more information on the composition of these teams see Section 5.3.1.

[90] A full list of all individuals consulted in parliamentary hearings is presented in Table S5.3.

Tables 5.1 and Figure 5.3 present the distribution of the number of informants according to the two variables and their subcategories. Table 5.2 presents a full list of informant's affiliations.

Interviews were conducted in Portuguese, recorded when informants gave their verbal consent, and then transcribed. For informants based in Lisbon, Sines and Aveiro (n=31), interviews were conducted face-to-face. For informants based in the Azores, Madeira, Algarve, Nazaré and Oporto (n=7), interviews were conducted using skype and/or telephone[91]. Interviews ranged in duration from 29 to 114 min (average c. 53 min) representing c. 33 h of recorded conversation.

Table 5.1. Primary role of informants within the Portuguese marine spatial planning process, and type of organization (sector) they represent. SEA: Strategic Environmental Assessment. 7-CAM: Agriculture and Sea Committee of the Portuguese Parliament.

Primary role	Number of interviews
Participant in the POEM development	17
Member of the Multidisciplinary team	10
Member of the Coordination team	6
Member of the SEA team	1
Participant in the Framework Law development	12
Law developer	2
Member of the 7-CAM Working Group	2
Individual consulted in parliamentary hearings [a]	8
External observer	9
Scientist	5
Legal adviser	1
Non-governmental organization representative	3

Sector	Number of interviews
Portuguese State	4
Government agency	11
Academia	12
Non-governmental organization	8
Independent consultant	3

(a) See Table S5.3, SM.

[91] Except one face-to-face interview with an informant based in Algarve, which took place in Lisbon.

Table 5.2. Affiliation of informants. Three informants are independent consultants, thus not having any affiliation.

Affiliation	Number of interviews
Portuguese Government, Office of the Secretary of State for the Sea	2
Portuguese Parliament, Agriculture and Sea Committee	2
Directorate-General for Maritime Policy	1
Directorate-General for Cultural Heritage	1
Directorate-General for Energy and Geology	1
Directorate-General for Natural Resources, Safety and Maritime Services	1
Institute for Nature Conservation and Forests	1
Institute of Mobility and Transport	1
Portuguese Environment Agency	1
Portuguese Navy	1
Portuguese Task Group for the Continental Shelf Extension	1
Turismo de Portugal [a]	1
University of Aveiro	1
Faculty of Sciences and Technology, University of Algarve	2
Faculty of Sciences, University of Lisbon	4
ISPA – Instituto Superior de Psicologia Aplicada	1
Faculty of Social Sciences and Humanities, New University of Lisbon	1
ISCTE – University Institute of Lisbon	1
IST – Instituto Superior Técnico, University of Lisbon	1
University of the Azores	2
FEEM – Portuguese Business Forum for the Sea Economy	1
Gulbenkian Oceans Initiative	1
Mútua dos Pescadores [b]	1
National Council for Environment and Sustainable Development	1
OCEANO XXI – Association for the Knowledge and Economy of the Sea	1
Portuguese Chamber of Biologists	1
Permanent Forum for Sea Affairs	1
WavEC – Offshore Renewables	1

(a) Portuguese tourism authority.

(b) Association of fishermen.

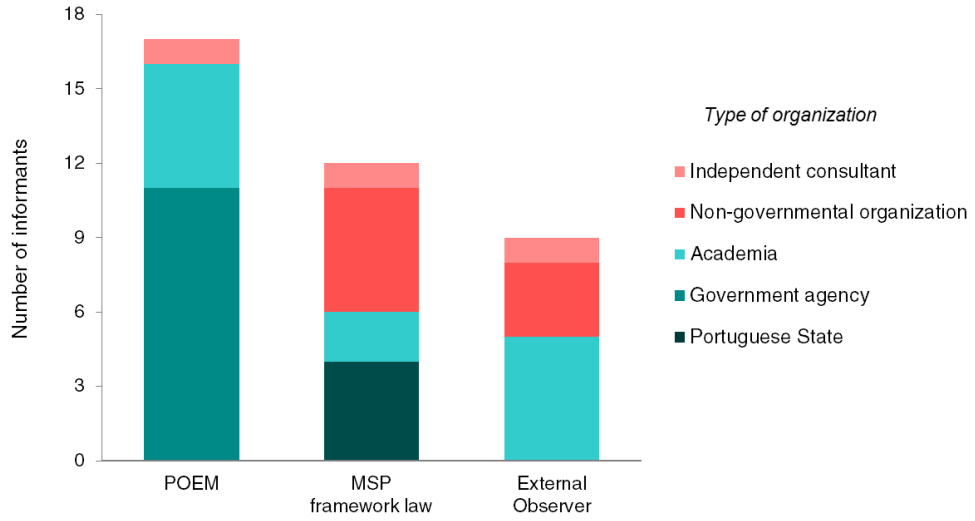

Figure 5.3. Distribution of the number of informants from the Portuguese marine spatial planning (MSP) process. Distribution is presented according to *role played* within the process (either *POEM participant*, *Framework Law participant*, or *External observer*) and the *type of organization* that informants represent. POEM: *Plano de Ordenamento do Espaço Marítimo*.

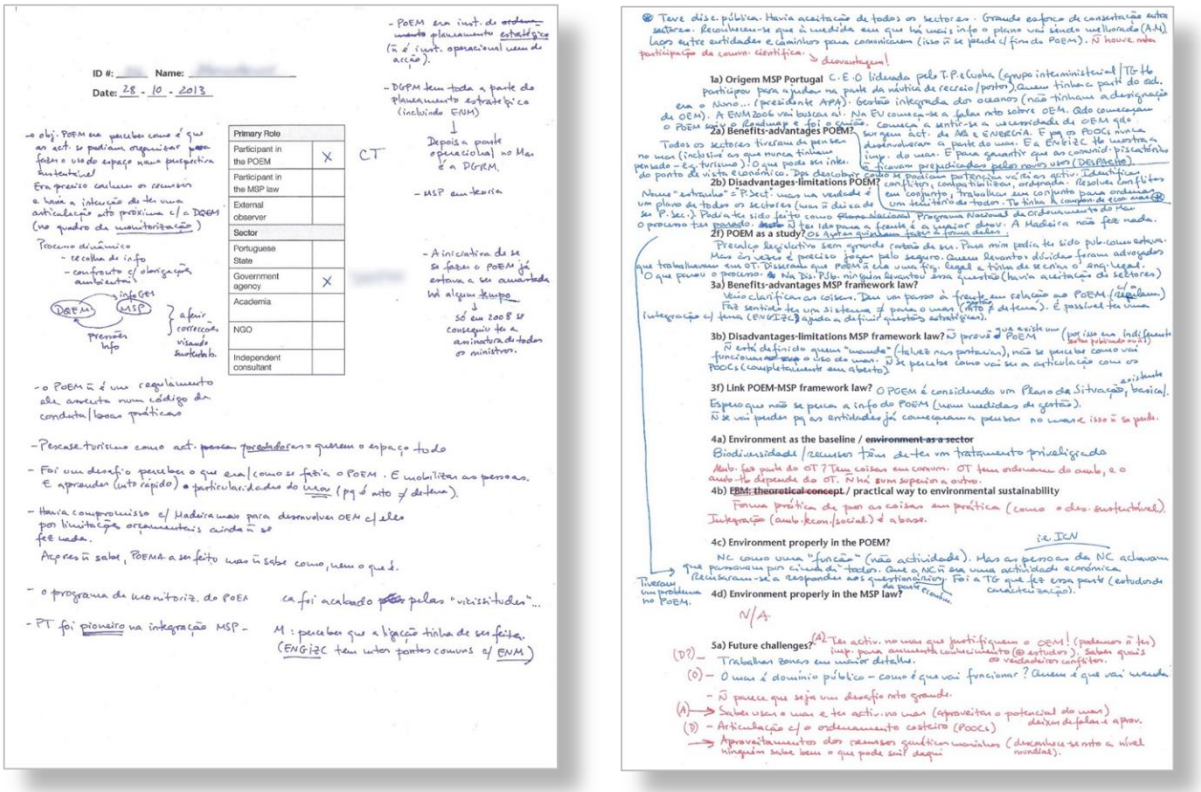

Figure 5.4. Analysis sheets used to take notes for each interview, both sides (detail from an interview to a member of the coordination team of the *Plano de Ordenamento do Espaço Marítimo*).

Interview transcripts were analysed using qualitative techniques (NVivo software [97]), and coding for major themes and sub-themes. From this analysis emerged the main views and opinions of informants on each main question. To ensure that no relevant information was lost during the transcripts' analysis, interview recordings were played back and notes were taken for each interview by manually filling analysis sheets based on the preliminary results (Figure 5.4). The final analysis of interviews' material occurred between 2015 and 2016.

Results are divided into two sections. The first one pertains to the description of the Portuguese MSP process, from the beginning of the POEM up to the publication on the MSP framework law (Section 5.3). The second one presents the key informants multiple perceptions on the process, according to the main questions of the interview script (Section 5.4). The latter are summarized in Tables 5.4 to 5.15. Because a large number of different views were expressed, only the opinions that were shared at least by three informants are presented in these tables. Nevertheless, a list of the opinions that gather a smaller consensus, i.e. one or two informants, can be found in Tables S5.5 to S5.9 (SM).

5.3. Results: Part I – The policy process

5.3.1. Developing the POEM

Early in 2009 the POEM began to be developed as a Sector Plan [28], one of the three possible Portuguese spatial management instruments at the national level [123][92] where the "sea" was considered to be a "cross-cutting" sector, merging the intentions and strategies of all maritime single activity sectors (e.g. tourism, fisheries, energy). The POEM was developed by an unusual and innovative organizational structure. Under the coordination of the Portuguese Water Institute (INAG), a Multidisciplinary Team (MT) operated together with a Coordination Team (CT) and a Strategic Environmental Assessment (SEA) Team. The MT, the one responsible for developing the POEM, was an inter-ministerial commission composed by representatives from all ministries belonging to the Portuguese Inter-ministerial Commission

[92] According to Decree-Law No. 380-99, when the POEM was started there were three possible types of spatial management instruments at the national level: (i) the National Program for Spatial Planning Policy, (ii) Sector Plans, and (iii) Special Spatial Plans (the later including protected areas spatial plans, public waterways spatial plans and coastal spatial plans).

for Sea Affairs (the CIAM), other government agencies, and representatives from the Autonomous Regions governments[93] [124]. By contrast, both the CT and the SEA team were mainly composed by elements from different Portuguese universities. The CT included elements from the University of Aveiro, University of the Azores, and University of Algarve and, together with INAG, was responsible for feeding the process with methodology and guidance. The SEA team encompassed a group of people from the University of Lisbon with a high level of expertise on SEAs of national plans, and was hired by INAG [124] to develop the (strategic) environmental assessment of the POEM[94] [26, 103, 104].

To develop the POEM, a total of twelve MT meetings were scheduled between January 2009 and July 2012 (Figure 5.5). POEM's initial version was developed within the first ten meetings, taking a little less than two years, and it encompassed four main documents[95]: a framework document [28]; the actual plan's proposal[96] [88, 89, 125, 126]; the technical rationale and diagnosis report[97] [90, 127-130]; and the environmental assessment report [87].

During the initial period of POEM's development, i.e. between March and May 2009, five dissemination panels and four thematic workshops took place (Figure 5.5) [90, 131]. These intended to reinvigorate the process, and to involve different stakeholder groups throughout the country before the official public consultation period. Panels were expected to gather the attention from different marine activity sectors by disclosing information on the POEM initiative[98], and thematic workshops would allow for the involvement of such sectors by promoting the discussion of specific subjects related to them [124]. In the end, workshops

[93] A detailed list of the entities that were part of the MT is presented in Table S5.2, SM.

[94] In line with both European and Portuguese legislation on environmental assessment, as a Sector *Plan* the POEM had to be subject to SEA. This is also acknowledged in Ruling No. 32277-2008 (that establishes the need to develop a marine spatial plan) which specifically states that "the present plan is subject to environmental assessment".

[95] See Figure 3.3 in Chapter 3.

[96] The plan proposal included the allocation of space to different uses – i.e. POEM's "spatialization" –, a set of management guidelines, an action program, and a monitoring program.

[97] The technical rationale and diagnosis report encompassed the baseline characterization studies, the strategic framework, the spatialization methodology, the data management and mapping methodology, and implications of legislation for MSP.

[98] Dissemination panels consisted on a presentation of POEM's objectives and methodology, POEM's website and participation forum, followed by a debate on the importance of the maritime space for resource protection and sustainable development of maritime activities.

allowed for the development of SWOT analyses and contributed to define POEM's strategic objectives[99], whereas panels failed to involve the general population in the process [124].

A few weeks after the tenth MT meeting, the formal public consultation process of the POEM began. For about three months, between November 2010 and February 2011, the plan's proposal and its SEA report were made available for consultation at both INAG's website[100] and INAG's headquarters [83]. All interested parties, such as citizens, stakeholders and NGOs, had then the chance to give their inputs by presenting written contributions[101] [83]. In addition to the dissemination activities carried out prior to this phase, during POEM's public consultation eight thematic public sessions were conducted throughout the country, disclosing information on what the POEM was and what was being done, and asking people to participate and be involved (Figure 5.5).

Shortly after the end of public consultation, however, there was a political change that carried large institutional modifications, some of them directly impacting the development of MSP in Portugal. In March 2011, the Portuguese government in office[102] suffered a major change when Prime Minister José Sócrates tendered his resignation following the rejection of a new Stability and Growth Programme[103]. The Government remained in office – as a "management government" – until June 2011, when early legislative elections occurred. These were won by a different political party, and a new government took office under both a different leadership and a different political ideology[104].

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[99] Detailed information on POEM's thematic workshops, such as the results obtained or the methodology that was followed, can be found in Appendix 1 of the Strategic Framework of the POEM document (in Portuguese).

[100] INAG's webpage on POEM's public consultation could also be accessed by links available at the websites of all entities that composed the MT.

[101] Contributions could be made by completing a participation form and sending it to INAG during the official consultation period.

[102] This was the Portuguese 18th Constitutional Government, which took office in October 2009 and had a majority parliamentary support from the Socialist Party – PS. Before that, when the POEM initiative was started, and even earlier when the NOS 2006-2016 was published, the government in office was also under the same leadership and political affiliation [132].

[103] This Stability and Growth Programme (PEC 2011-2014) was presented by the Government to the Portuguese Parliament as an annual update of the previous one (i.e. PEC 2010-2013) because of a socioeconomic context of "uncertainty and financial difficulties" [133]. PEC 2011-2014 was, however, rejected by the Parliament with votes from all five opposition parties [134].

[104] The Portuguese 19th Constitutional Government was a "coalition" government that comprised two political parties: the Social Democratic Party – PSD, who won the legislative elections, and the People's Party – CDS-PP, with whom PSD established a government agreement in order to form a government with majority parliamentary support [132]. Both PSD and CDS-PP are politically positioned at the "right" (PSD follows a

Regarding institutional changes, first, a new Ministry for Agriculture, Sea, Environment and Spatial Planning (MAMAOT) was created [101]. This new ministry incorporated areas and assignments from several previous ministries, thus having responsibilities over for example all natural resources, their protection and sustainable use, together with the spatial planning of both terrestrial and maritime spaces. In addition, it also gave a special emphasis to a new area – i.e. the "sea" – that was absent from the previous ministerial organizational structure[105] [132]. In effect, MAMAOT's mission included the "definition, coordination and implementation of policies (...) for the exploitation and potentiation of marine resources, in line with sustainable development, and social and territorial cohesion perspectives", and among MAMAOT's responsibilities was the "development of policies for the spatial planning of maritime spaces under Portuguese sovereignty or jurisdiction, ensuring their implementation and assessment" [101].

Second, in an effort to rationalize and optimize previously existing ministerial structures (thus promoting increased efficiency and reducing costs) several government entities and services were restructured, or disbanded and merged into new ones. The latter was the case of INAG, the entity responsible for POEM's coordination, who was disbanded and merged with nine other entities to create a new Portuguese Environment Agency[106] [101, 135].

This new Portuguese Environment Agency, however, did not retain any competences regarding the development of national MSP[107]. In fact, concomitantly to INAG's extinction, a new Directorate General for Maritime Policy (DGPM) was created[108] with the mission to

"liberal conservatism/liberalism" ideology and CDS a "conservatism/Christian democracy" ideology), while the previous government was positioned at the "centre-left" (PS follows a "social democracy" ideology).

[105] A new Secretariat of State for the Sea was created under the umbrella of MAMAOT.

[106] The new Portuguese Environment Agency – APA, I.P. resulted from the fusion of the previous Portuguese Environment Agency, INAG, River Basin Administrations (North, Centre, Tejo, Alentejo and Algarve), Committee on Climate Change, Committee for the Monitoring of Waste Management, and Commission on Environmental Emergency Planning. It entered office in April 2012.

[107] APA, I.P. has the mission to develop and monitor an integrated and participatory management of environmental and sustainable development policies. Regarding water resources, APA, I.P. is responsible for ensuring effective implementation of Law No. 58/2005 (the transposition of the Water Framework Directive into Portuguese law), which only goes until 1 nautical mile offshore, and for promoting the development and implementation of the ENGIZC (Decree-Law No. 56/2012). Marine related responsibilities, such as the implementation of MSP or the Marine Strategy Framework Directive belong to other entities from MAMAOT (respectively, Directorate General for Maritime Policy and Directorate-General for Natural Resources, Safety and Maritime Services).

[108] DGPM resulted from merging competences of three different entities: the Portuguese Task Group for Maritime Affairs, the Directorate General for Fisheries and Aquaculture, and the Institute for Ports and

"develop, assess and update the National Ocean Strategy; develop and propose the national policy for the sea (...); *spatially plan the maritime space, its different uses and activities*; participate in the development of the EU integrated maritime policy; and promote national and international cooperation regarding the sea" [109] [101]. Accordingly, among DGPM responsibilities was the development and coordination of actions required for a proper spatial planning of the maritime space [84, 101], where the POEM initiative would further be included.

Third, in addition to this major change on POEM's coordinating entity, other entities that integrated POEM's MT were also either disbanded and merged into new ones (e.g. Directorate General for Fisheries and Aquaculture, Institute for Nature Conservation and Biodiversity, and Institute for Ports and Maritime Transport) or restructured (e.g. former Portuguese Environment Agency, and Portuguese Task Group for Maritime Affairs) [101]. This brought new "actors" into the process, namely at an already advanced stage of the plan's development, which seems to have contributed to hinder the process[110]. In fact, after the 2011 political change, the pace of POEM's development significantly slowed down, and only sporadically did official occurrences take place (see Figure 5.5).

In October 2011, i.e. about eight months after the end of public consultation, INAG presented a "pre-final" version of the POEM to the new MAMAOT's Minister[111]. This version was attained in collaboration with all elements of the MT through remote communication [136, 137]. In fact, a document with all relevant modifications that resulted from the public consultation was sent to members of the MT for comments, and then, through an exchange of electronic messages, contributions were provided and the POEM's pre-final version was reached.

However, POEM's actual final documents were only attained between May and July 2012, when the eleventh and twelfth meetings of the MT took place, already under the coordination

Maritime Transport. It also assumed responsibility over monitoring actions related to the Cooperation Agreement for the Protection of the Coasts and Waters of the North-East Atlantic against Pollution (Regulatory Decree No. 17/2012). It entered office in February 2012.

[109] All translations of Portuguese documents in this chapter were made by the author.

[110] One informant, former member of POEM's coordination stated that «*after the government change, all interlocutors changed (...) the final MT meetings were full of new people, everything had to be explained again (...) and those new actors were full of new ideas, which is valid, but we were no longer at that stage*».

[111] Although the government change occurred in June 2011, the Decree-Law that established INAG's extinction was only published in January 2012 (Decree-Law No. 7/2012). Thus, in October 2011 INAG was still in office.

of DGPM. In the scope of these two final meetings, and because of the large time gap since the end of public consultation, i.e. about 15 months, members of the MT had the opportunity to revise their contributions to POEM's documents in order to reach and deliver a final version [136, 137]. Concomitantly, other aspects were debated in these two meetings, particularly future steps needed for POEM's implementation, such as licensing requirements and the POEM link to civil society, as well as ways to ensure POEM's adaptive management. It was also established that in early August 2012 the final documents of the POEM were to be sent to all participants, and subsequently submitted for "superior consideration", further acknowledging that a decision would be communicated as soon as it was available [136].

However, in a twist that surprised most participants in the process, in November 2012 a joint decree of eight Ministries[112] determined that the final documents of the POEM were to be made available in the DGPM website as a "study" on existing and future uses of the Portuguese maritime space[113] [33]. This means that, in the end, the POEM did not retain any legal or regulatory formal authority, neither as the Sector Plan it was first intended to be, nor as any other formal instrument. The same ruling additionally disbanded the MT, and further established DGPM as being responsible for ensuring the update of POEM's elements, whenever "the social, economic, cultural or environmental conditions, or theirs prospects for development, undergo important changes" [33].

[112] Ministry of Finance; Ministry of Foreign Affairs; Ministry of National Defence; Ministry of Internal Affairs; Ministry of Economic Affairs and Employment; Ministry of Agriculture, Sea, Environment and Spatial Planning; Ministry of Health; Ministry of Education and Science.

[113] Ruling No. 14449/2012 states that "the work developed by the multidisciplinary team resulted in an unprecedented *study* on the uses and activities that take place in the Portuguese maritime space, which is critical for the future planning and management of such space".

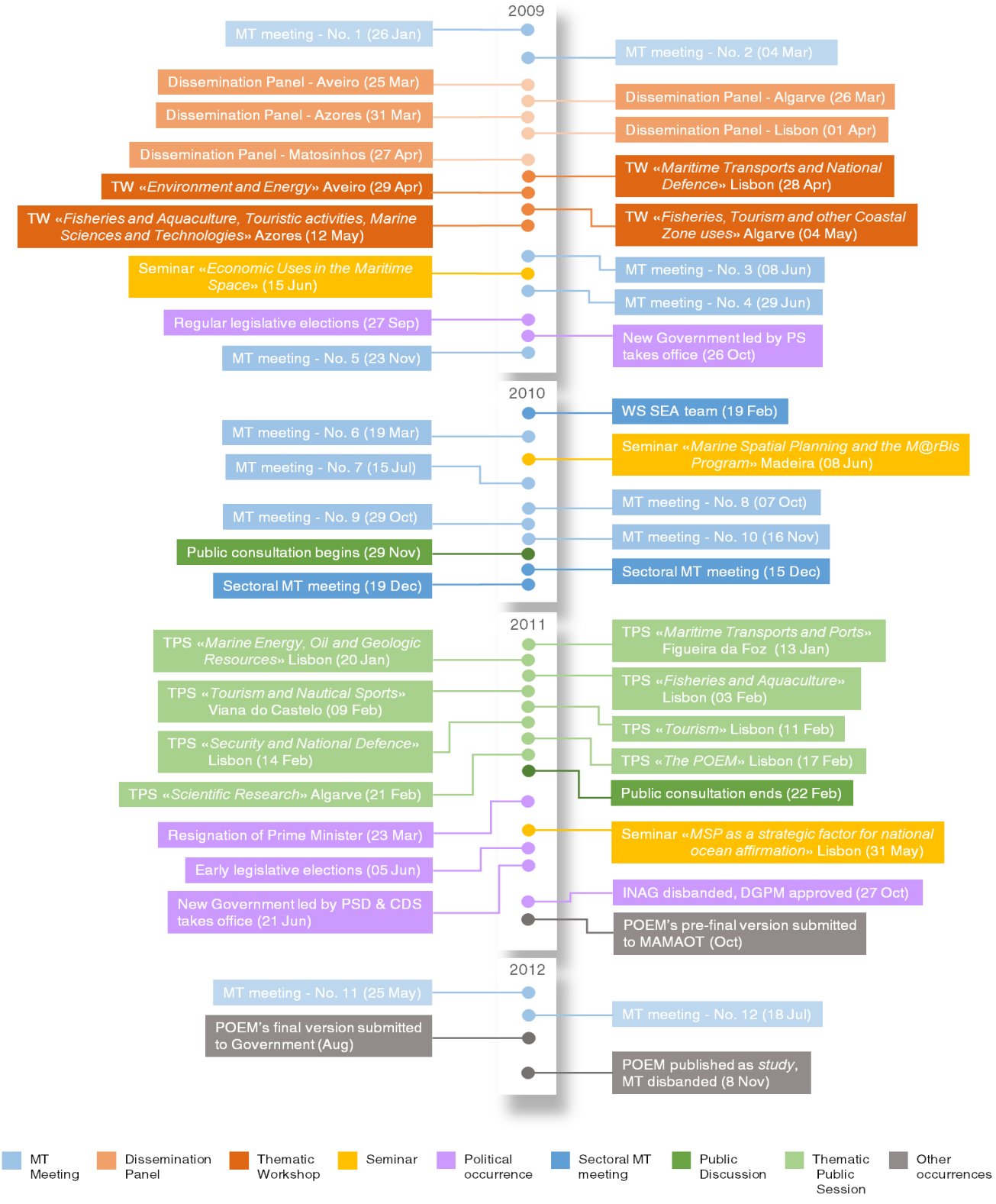

Figure 5.5. Timeline of the Portuguese marine spatial planning process – Developing the POEM. CDS: People's Party. DGPM: Directorate-General for Maritime Policy. INAG: Portuguese Water Institute. MAMAOT: Ministry for Agriculture, Sea, Environment and Spatial Planning. MT: Multidisciplinary team. POEM: *Plano de Ordenamento do Espaço Marítimo*. PS: Socialist Party. PSD: Social Democratic Party. TPS: Thematic public session. TW: Thematic workshop. WS: Workshop.

5.3.2. Developing the first Portuguese MSP framework law

Subsequently to the POEM "phase", the Portuguese MSP process shifted towards the development of MSP legislation (Figure 5.6). This began late in 2012, when the Portuguese Government started developing drafts for a MSP framework law[114]. In fact, in the scope of the Government Major Options for the 2013 Plan [138], the development of a MSP framework law was seen as a "structuring field of maritime policy, which will make a decisive contribution to streamlining maritime uses and will promote the best use of their full potential. This instrument will be the basis for simple and agile licensing" [115]. Concomitantly, by letter dated December 10, 2012, i.e. one month after the release of the POEM, the Office of the Secretary of State for the Presidency of the Council of Ministers asked for official opinions on a draft MSP framework law. This draft, designated as *REG. PL No. 597/2012* [116], was under the responsibility (and initiative) of both the Office of the MAMAOT's Minister and the Office of the Secretary of State for the Sea [139]. It aimed to establish the legal basis and general guidelines for Portugal's policy on marine planning and management. In response to such "consultation" request, several national entities presented their official opinions about the draft between December 2012 and February 2013 – namely the Regional Governments of both the Azores and Madeira; the Legislative Assemblies of both the Azores and Madeira; and the National Association of Portuguese Municipalities. Other entities, such as the National Council for Environment and Sustainable Development (CNADS) also sent their written opinions, but latter on[117].

After receiving and considering such opinions, the Government attained a final proposal for a MSP framework law, i.e. Law Proposal No. 133/XII [36], which was presented to the Portuguese Parliament in March 26, 2013. Two days later such proposal was sent to a special

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[114] A Member of Government stated that «*some months after attaining the final version of the POEM (…) we started working on this legislation (…) a joint decree was developed saying that the POEM was to end, [and] we were already working on this law proposal*».

[115] This is stated under the Fifth Option – *The challenge of the future: Priority sectoral measures*, Section 5.6 – *Sea*. These major options were approved by the Portuguese Parliament in November 27, 2012 and published in December 31, 2012.

[116] This designation appears several times within different written official opinions that available at the *Legislative Initiative of Law Proposal No. 133/XII* webpage [116].

[117] CNADS opinion dates from April 15, 2013. All these official written opinions are available for consultation at the *Legislative Initiative of Law Proposal No. 133/XII* webpage [116].

Parliament Commission for appreciation, the Agriculture and Sea Committee (7-CAM) [116]. The 7-CAM reported back to the Parliament Presidency in April 16, 2013, i.e. less than a month later, stating that the proposal met the formal, constitutional and procedural requirements and, therefore, that it could be discussed in plenary [140]. Consequently, a few days later the proposal was broadly discussed within the Parliament, with interventions from members of all six parliamentary parties[118] as well as from the MAMAOT's Minister [139]. Subsequently to such general discussion, both the PSD and CDS-PP submitted a request for the proposal to be sent back to the 7-CAM, to be further discussed, and such request was unanimously approved by all parliamentary parties [141].

Because of the complexity and range of matters under consideration, in May 28, 2013 a Working Group for Marine Planning and Management (GT-EBOGEMN) was established under the 7-CAM[119] to further discuss the proposal "in detail" [142]. GT-EBOGEMN was composed by ten members of the Parliament, representing all parliamentary parties[120] [121]. After its first meeting, in June 2013, the GT-EBOGEMN decided to schedule a number of hearings with a variety of NGOs and prominent members of the civil society (representing the academic, business, legal and economic sectors) that played an important role in Portuguese ocean and coastal management, in order to collect and analyse their inputs on the proposal. Accordingly, a total of twenty-five parliamentary hearings, grouped into eleven sessions, took place for about five and a half months [121, 142, 143] (Figure 5.6).

The first four hearings took place in early July. Here, two organizations related to maritime affairs and sustainable development were heard, together with two organizations that represented biologists and university directors. However, their scheduling stopped immediately afterwards and was only resumed three months later. The two formally appointed reasons for this suspension of works were both the traditional summer vacations

[118] These are the PSD, the PS, the CDS-PP, the Portuguese Communist Party – PCP, the Left Block Party – BE, and the Green Party – PEV.

[119] The parliamentary groups of PSD, PS and CDS-PP jointly presented a proposal to develop the GT-EBOGEM [142]. Concomitantly, according to an informant, member of the 7-CAM, «*the initiative of creating the working group originally emerged from PSD*».

[120] Three members from PS (including the GT-EBOGEM coordinator), three members from PSD, one member from CDS-PP, one member from PCP, one member from BE and one member from PEV.

period[121], and the electoral campaign for the local (municipal) elections of September 2013[122] [142-144]. However, other events also seem to have contributed to this long suspension in the hearings process. In early July, the Portuguese government in office experienced a political crisis, when one of its leaders, Minister Paulo Portas, tendered his resignation[123] [145]. Inherent to this resignation announcement – which ultimately did not go through – was a high probability of having early national elections, and a government change. This created a high level of political uncertainty, with subsequent impacts at the parliamentary activity level[124].

In addition to such political uncertainty, the resignation announcement also led to a number of changes within the government. These included the appointment of new members of government (e.g. Minister of Economy, Minister of State and Foreign Affairs, Vice-Prime Minister, and Minister for Environment, Spatial Planning and Energy) [132] but also another round of institutional changes. In what regards implications for national MSP, for example the MAMAOT was split into two ministries, the Ministry for Agriculture and Sea (MAM) and the Ministry for Environment, Spatial Planning and Energy (MAOTE) [146]. MAM, however, retained all competences regarding marine planning in Portugal [147] [125], and also the Minister previously in charge for MAMAOT [132]. DGPM remained under MAM's umbrella, also retaining its mission, and responsibilities on MSP.

In early October, parliamentary hearings were finally restarted, and within a two weeks period seven more sessions took place (Figure 5.6). These included three associations related to the fisheries sector, one organization related to maritime economy, and three university professors (with expertise in biology, geology and governance). However, hearings were

[121] Generally, this encompasses the period from mid-June to mid-September.

[122] The general elections for local authorities took place, throughout the country, in September 29, 2013.

[123] The resignation announcement derived from a disagreement between Minister Paulo Portas, leader of CDS-PP and Minister of State and Foreign Affairs, and Prime Minister Pedro Passos Coelho, leader of PSD, regarding the appointment of a new Minister of Finance.

[124] One informant, member of the 7-CAM clearly stated that «*when Minister Paulo Portas made that statement, we were strongly convinced that the government was not going to resist, that it would fall, and we talked about stopping the hearings process (…) and the scheduling of hearings stopped*».

[125] MAM's responsibilities include the "development of policies for the spatial planning and management of maritime spaces under Portuguese sovereignty or jurisdiction, ensuring their implementation and assessment, and promoting their articulation with policies for coastal zone planning". MAM's mission includes the "definition, coordination and implementation of policies (…) for the exploitation and potentiation of marine resources".

again suspended after October 23, this time because of the discussion on the State Budget for 2014 [126] and only during a three weeks period.

In mid-November, the process continued with the occurrence of three additional sessions, with three environmental NGOs. In late November, between Hearings No. 14 and 15, the 7-CAM asked the Parliament Presidency for a time extension until January 2014[127] to keep analysing the proposal, stating that the complexity of discussed matters, plus the large number and variety of hearings did not allow the 7-CAM and GT-EBOGEMN to finish the detailed analysis within schedule [142]. The final eleventh parliamentary hearings took place within less than a month, ending before Christmas. Here, the GT-EBOGEMN heard two maritime economy specialists, a legal adviser, two university professors (with expertise in natural sciences and economy), an ocean policy specialist, two aquaculture entrepreneurs, two organizations on business, and the director of a maritime museum (who also was a university professor with expertise in social sciences).

There were four GT-EBOGEMN meetings during January 2014 (Figure 5.6), most of them to analyse the state of play and further timetable of the process. The last meeting of January, however, was already dedicated to the assessment of a set of amendments proposed by each parliamentary group. In fact, as a result of the hearings process, and the variety of contributions provided by all consulted entities and individuals, the different parliamentary groups proposed a number of changes to the draft MSP framework law[128]. Such amendments were voted by the GT-EBOGEMN in February 4, and during the voting a number of them were reformulated[129]. The nineteenth and final meeting of the GT-EBOGEMN took place a couple of days later, and focused on the assessment of their final report.

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[126] One informant, member of the 7-CAM, stated that «*there are parliamentary barriers that cannot be overcome. When the discussion on the State Budget begins (…) everything else stops, the Parliament Committees' activity stops (…) [and] committees only meet with the Budget, Finance and Public Administration Commission or with the government. We are talking about two months that are only about the Budget*». According to the official calendar [148], the State Budget for 2014 was *discussed in general* within the Parliament between October 15 and November 1, *discussed in detail* between November 4 and 25, and voted in November 26. This period overlapped with the three weeks period when hearings did not take place (from October 23 to November 13).

[127] Time extension of 242 days, until January 31, 2014.

[128] Individually, the PS proposed two amendments, PCP proposed eleven amendments, and BE proposed fourteen amendments. The PSD, PS and CDS-PP jointly proposed thirty-four amendments to Law Proposal No. 133/XII. For more information see Appendix II (Changes proposed by parliamentary groups) of ref. [143].

[129] For more information see Appendix III (Guide of vote) of ref. [143].

A replacement version of the draft MSP framework law[130] was then presented by the GT-EBOGEMN to the 7-CAM and, in February 11, the 7-CAM validated the work developed by the GT-EBOGEMN. One day latter, the 7-CAM asked the President of the Parliament to collect the agreement of the Government on the replacement version. Concomitantly, it submitted the replacement version to be (i) broadly voted, (ii) voted in detail, and (iii) attain a final overall vote. All three votes took place in February 14 [149-151], and by then the Portuguese Parliament approved the final version of the draft MSP framework law with support from the main three parliamentary parties, i.e. PSD, PS and CDS-PP. The GT-EBOGEMN ceased working in March 5 [121] and, on April 10, 2014, the first Portuguese MSP framework law – Law No. 17/2014 [29] – was promulgated in the Portuguese Official Journal.

[130] This can be found in Appendix IV (Replacement text) of [135].

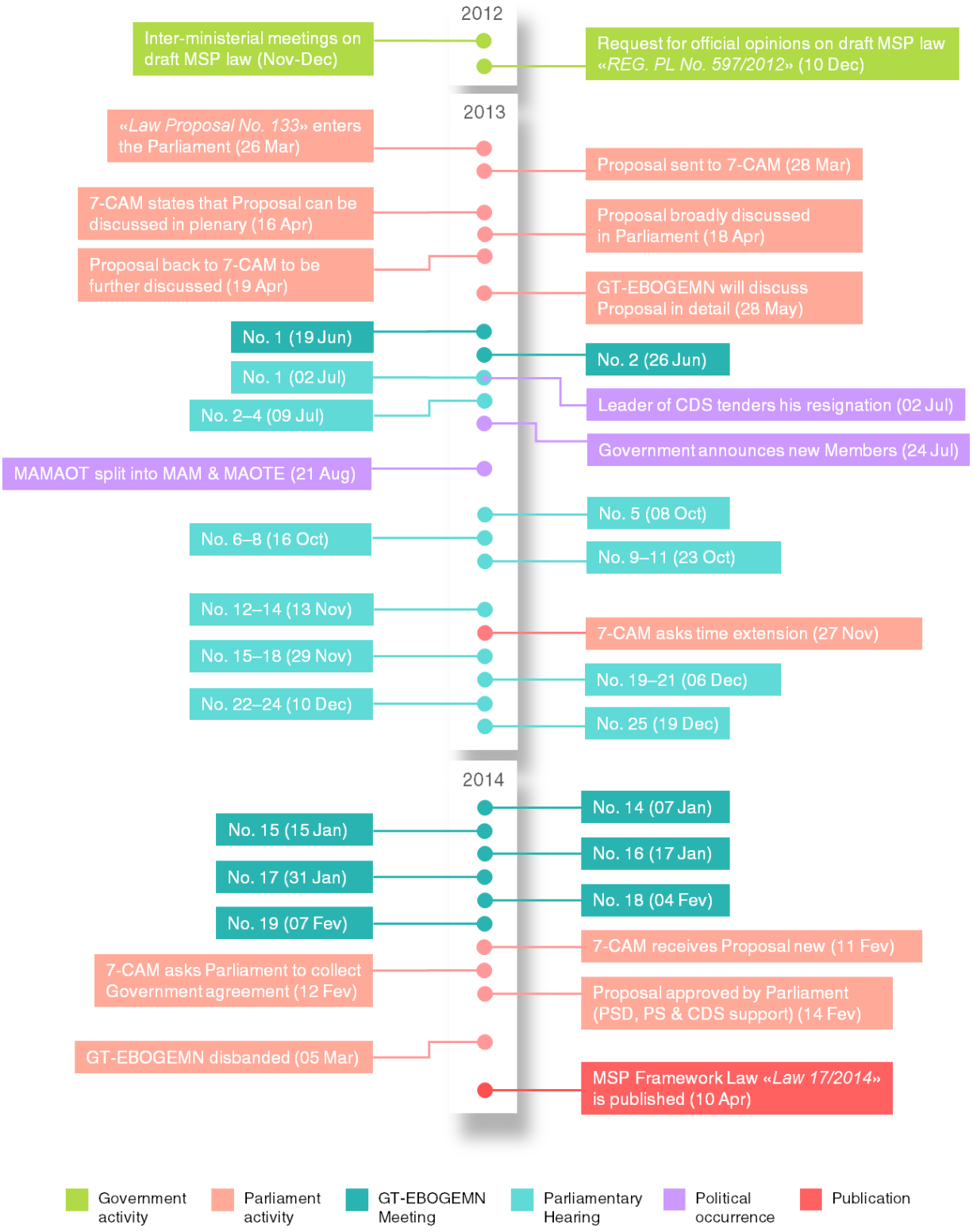

Figure 5.6. Timeline of the Portuguese MSP process – Developing the MSP framework law. Every set of "hearings" also corresponds to a GT-EBOGEMN meeting, which is why the latter numbering "suddenly" changes from 2 to 14 in the timeline. 7-CAM: Agriculture and Sea Committee. GT-EBOGEMN: Working Group for Marine Planning and Management established under 7-CAM. MAM: Ministry for Agriculture and Sea. MAMAOT: Ministry for Agriculture, Sea, Environment and Spatial Planning. MAOTE: Ministry for Environment, Spatial Planning and Energy. MSP: Marine spatial planning.

5.4. Results: Part II – Key actors interviews, and their multiple perceptions on Portuguese marine planning

As stated earlier, there were nine leading questions in the interviews script, corresponding to the following topics: (i) the origin of MSP in Portugal; (ii) the POEM main strengths; (iii) the POEM main weaknesses; (iv) the MSP framework law main strengths; (v) the MSP framework law main weaknesses; (vi) POEM's published as a study; (vii) the link between the POEM and the MSP framework law; (viii) environmental concerns in Portuguese MSP; and (ix) future challenges for Portuguese MSP. The main perceptions of informants on each of these topics is presented and analysed in the following subsections.

5.4.1. The Origin of Spatial Planning

As stated before in Chapter 4 (introductory section), unlike other nations in Portugal the sea is not yet under a very intense utilisation. Most of its uses are limited to the territorial sea (12 nm from the baseline) and there is a predominance of "traditional" uses, such as fishing, maritime transportation and tourism. Because of the absence of a significant anthropogenic pressure, to which MSP would constitute an answer to, it was advanced that the Portuguese MSP process could have been started because of both a "national initiative", and the "recognition of MSP importance at the European and international levels". The reasons behind the origin of marine planning in Portugal are revisited and further analysed in detail in this section, but this time from the perspective of interviewed key-actors of the Portuguese MSP process. A summary of the opinions expressed is presented in Table 5.4. Also, a number of informants are convinced that the origin of MSP in Portugal derives from a combination of reasons (c. 61%), thus simultaneously identifying different explanations.

One of the most commonly identified reasons to explain the beginning of MSP in Portugal (mentioned by c. 45% of informants) is, in fact, the existence of **European and international guidelines**. Informants broadly agree that at the time the POEM was started the EU clearly "cherished" the idea of developing MSP. The importance and pertinence of MSP were being recognized in European guiding documents, such as the *EU Green Paper* from 2006, the *EU*

Integrated Maritime Policy (IMP) from 2007 and the *EU MSP Roadmap* from 2008 [4, 37, 52] [131] . But also at the international level with the publication of documents such as UNESCO's *Visions for a Sea Change: report of the first international workshop on marine spatial planning* from 2007 and UNESCO's *Marine spatial planning: a step-by-step approach toward ecosystem-based management* from 2009 [1, 44]. «*MSP was becoming a trendy subject, both internationally and nationally*» (law developer). Following the development of the MSP Roadmap, there were four international workshops to discuss the key principles of the Roadmap, namely how they were to be materialized. These took place in Brussels, Ispra, Stockholm and also in the Azores[132], which contributed to foster Portuguese involvement in MSP. To a number of informants, this European focus on MSP was already connected to the intention of developing a MSP directive (although this was only approved later, in 2014). «*At the EU level (…) there were already conversations regarding a directive on MSP*» (NGO representative and external observer). For example, a member of the CT clearly advocated that the Roadmap workshops were already related to such intention. «*The workshops (…) were not to discuss the ten principles themselves, because such principles are unquestionable (…) the discussion was on how the roadmap principles could be made operational, but above all the workshops served the purpose of listening to the opinion of Member States, and of Member States key actors, regarding the possibility of developing a MSP directive (…) this was never openly discussed, that is, it was never a topic of any of the workshops, but this was in reality what was being discussed at the corridors and tables*».

[131] See Chapter 2, Section 2.2 for information on when, and how, MSP started to be addressed in EU documents.

[132] This series of workshops were held during 2009 and stimulated a wide debate on the development of a common approach to MSP in Europe: (i) Kick-off conference – Brussels (February 26); 2nd EU MSP workshop – Ispra (April 23-24); (iii) 3rd EU MSP workshop – Azores (July 2-3); and (iv) Final workshop and concluding conference – Stockholm (October 2) [152].

Table 5.4. Main responses to Question 1a: What triggered the development of MSP in Portugal? Seven informants (18.4%) did not respond. Because some informants have answered multiple reasons, percentages do not sum to 100%. NGO: Non-governmental organization.

	European and International guidelines	National initiative	Need for framework for ocean uses	Sectoral pressures
Total Count	**17**	**15**	**13**	**6**
Total percentage	44.7%	39.5%	34.2%	15.8%
Count by Primary Role				
Participant in the POEM	7	8	4	1
Participant in the MSP law	5	5	2	3
External observer	5	2	7	2
Count by Sector				
Portuguese State	1	1	2	0
Government agency	2	6	2	0
Academia	7	4	5	4
NGO	5	2	2	2
Independent consultant	2	2	2	0

Concomitantly, some informants further advocated the existence of a European "imposition" or "pressure" to develop MSP. Others simply recognized MSP as a natural consequence of the process of developing a blue economy, started by the EU. A NGO representative, and external observer, mentioned that the EU began to pay attention to MSP following the Belgium case. «*Belgium was the first member state to develop MSP prior to the Roadmap, and it is understandable (…) there was such a competition for maritime space that there was a real need to regulate the use of the sea (…) and then I believe the EU found the idea very interesting and decided to promoted its replication in other states*». Finally, a member of the CT stated that because INAG's staff members started participating in international fora and experts working groups about ICZM, where MSP was being debated, there was an increased awareness regarding EU priorities and the need to be aligned with them. This is in line with the perception

that there was a community guideline that sooner or later would have to be implemented at the national level and, consequently, it would be better for Portugal to develop MSP as soon as possible. In effect, as stated by both a member of the 7-CAM and a legal adviser external to the process none of these guidelines were mandatory and Portugal seemed to have taken the initiative to start developing work before it was obliged to it.

This brings us to the second reason that was identified to explain the beginning of MSP in Portugal, and the second one to gather the largest consensus among informants (c. 40%). Many believe that between the late 1990s and the early 2000s Portugal established a **national goal related to the ocean**. The development of a maritime economy was clearly acknowledged as an opportunity. And this was closely linked to the unveiling of the economic potential of the Portuguese sea, together with the definition of the outer limit of Portuguese continental shelf beyond the 200 nm. «*There was to some extent a national goal to develop MSP, based on the recognition that MSP was going to be extremely important and that new ocean uses were going to be developed*» (member of MT). A casuistic political decision and a disappointment with EU terrestrial policies were also mentioned as motives for this national initiative. «*It was simply because of a political decision (…) there was a sensitivity, an opinion, a political timing, rather than a structured rationale*» (individual consulted in parliamentary hearings). «*Prime Minister José Socrates established a political imperative to have a marine spatial plan developed in two years*» (member of MT). «*It was a political decision (…) from time to time there is a political interest and concern with the sea*» (member of MT). «*After a period of dazzle with the EU, when it abandoned the sea (…) Portugal understood that (…) somehow it had to return to its origins (…) that is, some disenchantment with Europe made us turn to more traditional, Atlantic issues*» (scientist and external observer). Above all, it is agreed that Portugal was a pioneer, showed leadership, and was among the first European countries to start developing MSP.

According to an individual consulted in the parliamentary hearings, all this was **triggered in 1998.** «*The year of 1998 was known as the International Ocean Year, when the famous Blue Official Journal*[133] *totally devoted to the sea was published, which had two very important aspects (…) the*

[133] This refers to the Portuguese Official Journal No. 157/98. It was published with a different color than usual, i.e. blue, as part of both the celebrations of the International Ocean Year, and the occurrence of the EXPO 98 in Lisbon.

creation of an inter-sectoral oceanographic commission[134]*, and the creation of the Dynamic Program for Marine Sciences and Technology*[135] *(…) also in 1998, the study developed by the Independent World Commission on the Oceans*[136]*, chaired by Mário Soares, was published (…) here the spatial planning issue became obvious, as the key problem was the management of human activities (…) and so a two folded process began (…) which brought back this idea of Portugal's return to the sea (…) first because of the EXPO 98*[137]*, during which the media published articles related to the ocean on a daily basis, and when dozens of international conferences took place and (…) then because of a debate that emerged among a minority (…) two social groups, the scientific community (…) and the Navy (…) regarding the need for placing the ocean at national policies*». Also within this "blue" Portuguese Official Journal, and in line with the ratification by Portugal of the United Nations Convention on the Law of the Sea (UNCLOS)[138], an inter-ministerial commission was created with the objective of "investigating and presenting a proposal for the delimitation of the Portuguese continental shelf" [156]. In fact according to UNCLOS, the limits of a nation's continental shelf can extend beyond the 200 nm limit if the geological and hydrographic characteristics so justify it[139] [157], which seemed to be the case for Portugal. Furthermore, in the ambit of the creation of two marine reserves, it was recognized within the Official Journal that "the Portuguese coast and adjacent maritime space have been subjected to *several scientific and oceanographic prospecting actions*,

[134] According to Council of Ministers Resolution No. 88/98 [153], this commission was created to assist the Minister for Science and Technology in his obligations regarding the coordination of scientific research and technological development activities, especially the ones related to the ocean. It derived from the acknowledgement that a comprehensive institutional framework was needed, one of an inter-sectoral and interdisciplinary nature, where all entities involved in marine research were appropriately represented.

[135] According to Council of Ministers Resolution No. 89/98 [154], through this Program the government intended to give priority to marine scientific and technologic research, in order to develop the knowledge required for a rational and responsible use of the ocean.

[136] This refers to *The Ocean: Our Future* report [155].

[137] This refers to the 1998 Lisbon World Exposition, which took place from May to September 1998, and whose theme was "The Oceans, a Heritage for the Future". The later was chosen as part of the celebrations of the 500th anniversary of Vasco da Gama's arrival at India during the Portuguese discoveries.

[138] This occurred in 1997, with the approval of the Decree of the President of the Republic No. 67-A/97 and the Parliament Resolution No. 60-B/97, both dating from October 14.

[139] Article 76 of UNCLOS, on definition of the continental shelf, states that "the coastal State shall delineate the outer limits of its continental shelf, where that shelf extends beyond 200 nautical miles from the baselines (…) by straight lines not exceeding 60 nautical miles in length, connecting fixed points, defined by coordinates of latitude and longitude (…) information on the limits of the continental shelf beyond 200 nautical miles from the baselines (…) shall be submitted by the coastal State to the Commission on the Limits of the Continental Shelf (…) the Commission shall make recommendations to coastal States (…) [and] the limits of the shelf established by a coastal State on the basis of these recommendations shall be final and binding" [157].

which prove the *existence of a vast biological richness* (…) we have therefore an absolute need to potentiate the existing marine resources, by using adequate management measures, which allow the maintenance of key ecological systems and life supports to ensure a sustainable use of marine resources, to preserve biodiversity, to recover damaged or overexploited resources and to safeguard the various types of marine biotopes" [140] [158]. But more importantly, here, a clear reference to MSP can already be found. In fact, it is stated that "the marine environment shall be perceived under a sustained multiuse reasoning, and the corresponding management instruments and models shall be *based in the spatial and temporal planning of the different uses*" [141] [158].

Another identified milestone in this national path towards ocean planning was the **Strategic Commission for the Oceans** (SCO) report. In 2003, recognizing the strategic importance of the Ocean for Portugal, the need for a proper ocean governance, and in view of making the most of the ocean's political, economic and cultural potential, the SCO was created under the responsibility of the Prime Minister [159]. The SCO main goal was to establish "the elements for a national Ocean strategy that, strengthening the association of Portugal to the Sea, is based upon the sustainable use and development of the Ocean and its resources, and that fosters the management and exploitation of maritime areas under national jurisdiction" [159]. And this was meant to be achieved by developing a report establishing the guidelines for an ocean strategy, as well as the policies, measures and actions needed to implement such strategy. *The Ocean, a National Goal for the 21st Century* document, i.e. the SCO report, was thus published in 2004 [93] and because it was considered that the SCO had already attained its objectives, the commission was disbanded in the same year[142]. According to a member of the MT, the SCO report «*opened the door to this need for MSP (…) although this reference was a bit hidden*». In fact, as advocated by a member of the CT, the SCO report constantly refers to "integrated ocean management"; however, this occurs in a clear parallelism to MSP. Indeed, it is plainly stated that "the so desired *integrated management* may be understood as the *activity of planning and organizing human activities* inherent to the shared use, the management and the conservation of coastal and marine spaces, and their resources

[140] Italics by the author.

[141] Italics by the author.

[142] This occurred with the approval of the Council of Ministers Resolution No. 187/2004, from December 22.

(…) integrated management takes as its premise that all elements (…) lead their actions (…) towards a common goal: the *promotion of sustainable relationships between human activities and the ocean space*" [143] [93]. At the same time, two individuals consulted in the parliamentary hearings specifically acknowledged that the SCO report was the basis of the EU IMP. «*A strong change derived from the Agenda 21, namely chapter 17 on ocean integrated management (…) some countries then start developing integrated ocean policies, first Australia, then Canada and the United States (…) in Portugal it all started with the SCO (…) the SCO report was quickly translated into French (…) and when the European Commission decided to start developing an integrated maritime policy in late 2004, early 2005, France who always likes to have relevant diplomatic initiatives got together with Portugal and Spain, and the three countries presented a very interesting contribution that was at the origin of the IMP let's say*[144] *(…) it was the first substantial document seen at the European level (…) this French work , which was also influenced by Portugal and Spain, is completely based on the SCO report, for example the objectives, the headings, are the same*» and «*the EU IMP was largely originated in Portugal, it was copied (…) the SCO was in office during Prime Minister Durão Barroso mandate*[145] *(…) and when he went to Brussels, all these ideas went with him (…) therefore, the original text from our SCO report was translated at the European level*». Concomitantly, and as pointed out by a member of the CT, in 2005 the President of the European Commission (Durão Barroso) asked the Commissioner for Fisheries and Maritime Affairs (Joe Borg) to steer a new **Maritime Policy Task Force** further stating that "the next stage of this work will be to draft a Green Paper on a future maritime policy for the Union, which (…) will constitute a first step towards a wider, more public debate on an all embracing EU Maritime Policy" [160]. These views end up placing Portugal at the very origin of some of the major European ocean policy documents, which in turn are believed to be among the principal triggers for Portuguese MSP (see above), therefore working in an almost "feedback loop". «*There was a feedback process (…) because Portugal played a considerably important role in turning Europe to the sea (…) namely the European maritime policy was developed under the responsibility of Portuguese people, when Durão Barroso was*

[143] This is referred in the report page 63, while addressing the Strategic Vectors. Italics by the author.

[144] In page 4 of the NOS 2006-2016 it is stated that "Portugal has been at the forefront of this process, having developed, together with France and Spain, what was the first contribution to the Green Paper". The EU Green Paper was published in 2006 and aimed to promote a debate on the future of EU Maritime Policy.

[145] The 15th Portuguese Constitutional Government was led by Prime Minister José Durão Barroso, from Abril 2002 to July 2004 [132]. It ended due to the Prime Minister resignation, who was elected President of the European Commission.

at Brussels (…) and then this was a self-sustaining process that also helped Portugal to develop its marine policies» (scientist, and external observer).

It was advocated that following all these occurrences, and because of a growing recognition of the importance of the Ocean for the Portugal, in 2006 the **first National Ocean Strategy** (NOS 2006-2016) was published. «*Someone was far-sighted enough to recognize (…) and understand that Portugal had a lot of ocean to exploit (…) and this is smart, understanding that we had to look towards the ocean once again (…) and the NOS resulted from this*» (scientist, and external observer). To a number of informants, the start of Portuguese MSP clearly derived from the NOS 2006-2016, particularly because the later recognizes MSP as one of its keystones. «*It was a government guideline, regarding the NOS 2006-2016, where MSP was identified as an action*» (member of MT). «*MSP was both a pillar and a strategic line of the NOS 2006-2016*» (individual consulted in parliamentary hearings). The NOS 2006-2016 is in fact the first Portuguese government document that attributes a preeminent role to MSP. It is stated that "*spatial planning* is a governance tool (…) essential to ensure a holistic view based on the principles of sustainable development, precautionary approach and ecosystem approach, through the *identification and spatial planning of all existing and future uses*, allowing the support of a truly integrated, progressive and adaptive management of the ocean and coastal zone" [18] [146]. What is more, the NOS 2006-2016 establishes that a prosperous maritime economy must build on three strategic pillars. And these are (i) knowledge, (ii) active promotion and protection of national interests, and (iii) *spatial planning*. Concomitantly, to facilitate the implementation of those three pillars the NOS identifies eight strategic actions, and the fourth one directly pertains to the "spatial planning of ocean uses" [147]. This preponderance that is given to MSP in the NOS led a number of informants to argue that **the POEM**, the first

[146] This is referred in page 13 of the NOS. Italics by the author.

[147] The eight strategic actions of the NOS 2006-2016 are identified in page 22 of the NOS. The fourth one is defined as follows: "one of the main tools to promote economic activities associated to the sea is the *righteous spatial planning of the ocean space and of coastal zones*. In order to do so, it is necessary to identify, map and promote the speeding up and simplification of procedures to foster maritime economy, without jeopardizing environmental sustainability, as well as to create opportunity maps for new uses, and to coordinate systems for monitoring, surveillance, control, security and national defense". Moreover, a number of "measures" are established for this strategic action: *(i)* identify how the different maritime activities use the maritime space; *(ii)* promote the spatial planning of existing activities while envisaging future uses and creating opportunity maps at local, regional and national levels; *(iii)* speed up and simplify procedures for the licensing of maritime activities; and *(iv)* coordinate the use of systems for security, monitoring, surveillance and control of maritime and coastal activities.

Portuguese marine spatial plan, resulted from an INAG initiative, an attempt, to implement the NOS 2006-2016. «*The POEM is integrated in the NOS 2006-2016 (…) one of the NOS goals was the development of MSP to better know the existing activities and how they could be spatially organized (…) the POEM aroused when everything was emerging at the EU level (…) there was an idea that the alignment between the NOS 2006-2016 and the international context would point in the MSP direction (…) the initiative do develop the POEM finally went through in 2008 (…) it was being procrastinated for long and only then did it collect the signatures from all ministers*» (member of CT). Two years after the publication of the NOS 2006-2016, a Portuguese government ruling [26] established the need to develop a marine spatial plan – the POEM. In its introductory section, this ruling clearly acknowledged POEM's development as a natural step towards the implementation of the NOS, by emphasising that in the NOS spatial planning was already plainly identified as an essential governance tool, but also as both a strategic pillar and a strategic action. Because this ruling further states that the implementation of these actions is to be promoted by the CIAM, and that the team that will develop the plan must be composed by representatives from all ministries belonging to the CIAM, some informants believe that the origin of Portuguese MSP is also linked to such commission. «*There was a designation from CIAM to develop the works that led to the POEM (…) and this paved the way towards MSP*» (law developer). «*In effect, the push for the development of this marine spatial plan was made by the CIAM (…) it was a strategic line that needed to be pursued*» (member of MT). Finally, a member of the CT further stated that because the EU MSP Roadmap was launched alongside the start of the POEM[148], it ended up serving as a "script" for POEM's development.

The third identified reason to explain why Portuguese MSP was started, is the **need for a framework** to develop and manage ocean uses (c. 34%). As mentioned before, Portugal had the necessity to harness the economic potential of its national ocean space, by promoting the development of a strong maritime economy. And, in this context, having a formal MSP framework was essential. «*There was a recognition of the potential to explore marine resources (…) such as oil, polymetallic nodules, and natural gas (…) and the subsequent need to create a system that allowed interested parties to develop such exploitation*» (scientist, and external observer). «*MSP fits the present national situation very well (…) the ocean may be the main answer to fight it (…)*

[148] The MSP Roadmap dates from November 2008, while Ruling No. 32277/2008 that establishes the will to start developing the POEM was approved in May and published in December 2008.

Portugal has chronic external imbalances (…) and it does not yet have a productive structure that is strong and competitive enough in the global picture (…) we would always have the greatest interest in looking at the sea as a source of wealth to stimulate the country (…) among living and non-living resources the seabed and subsoil have an extremely large set of richness that we could use (…) we cannot neglect the overwhelming role to be played by the ocean (…) in what regards endogenous resources» (member of 7-CAM). In fact, many informants advocated that there was a necessity for MSP in order to ensure that new ocean uses, such as renewable energy, offshore aquaculture, and geological resources mining, could be developed in the Portuguese maritime space. MSP would not only reduce conflicts among such ocean uses, but would also allow the legal stability needed to promote investments in the ocean. New uses would tend to collide with existing ones, being therefore limited in the absence of a spatial planning process. At the same time, it was key that traditional ocean uses, such as fisheries, were not compromised by new uses. «*The public administration and private parties both felt a need for information on where each ocean use should be developed (…) which areas should be allocated to which uses, and under which rules (…) this was not defined in a systematic way (…) even if just for existing uses*» (legal adviser and external observer). «*Marine renewables are looking forward to having a legal framework for ocean use, because there is nothing beyond the 1nm*» (member of MT).

According to a member of the CT, when the search for maritime space began in order to establish pilot areas for aquaculture and renewable energy, the INAG felt a real need of having a system that allowed the licensing of maritime space. And so the development of MSP was fostered. To both a member of the MT and a scientist external to the process, this driving force related to the ocean uses is closely linked to the Portuguese proposal for the delimitation of its continental shelf beyond the 200 nm. It was argued that such intention had facilitated POEM's development, by putting a strong emphasis in the development of a maritime economy. And that the great activism of the person in charge for the Task Group for the Continental Shelf Extension (EMEPC) at that time had highly contributed to such purpose. Moreover, some informants stated that a spatial planning framework was needed in order to ensure that the Portuguese ocean was exploited in a sustainable way (economically, socially, and environmentally).

Finally a number of informants believe that the reason behind the beginning of MSP in Portugal is related to **sectoral pressures**, in particular from the energy sector (c. 16%).

Informants agree that there was a recognition of the importance of marine renewables, and that this led to the setting up of political interests. «*The Sócrates government had a clear focus on the development of renewable energy (…) and there was a large potential to do it in the ocean*» (scientist, and external observer). Concomitantly, major Portuguese economic groups, such as Galp and EDP[149], seemed to have specific interests regarding the potential to exploit oil and natural gas in the Portuguese maritime space. As a result, they wanted responsible entities to establish areas in the ocean where the development of marine renewables and of resources mining would be prioritized against other uses. These "strategic reserves" of ocean space were thus meant to ensure that areas of high potential for the exploitation of wind and wave energy, oil and gas, were not allocated to other ocean uses, limiting the exploitation possibility. However, a member of the CT, a member of the MT and a member of the SEA team clearly showed their disbelief regarding this explanation for the start of MSP. If the beginning of MSP had solely resulted from sectoral pressures, at the present moment the Portuguese MSP process would be far more developed that it actually is. Moreover, «*if there were sectoral pressures (…) they were not consequential (…) for that reason I do not believe is such explanation (…) the energy sector did not make any pressure for MSP. Energy was always a very important sector, one that does what it wants to do, so it would not need the POEM to do anything (…) so the fact that the POEM could have resulted from their lobbying does not make any sense to me*» (member of CT).

[149] The *Galp Energia* group is a Portuguese corporation focused on oil and gas exploration and production, natural gas transportation and distribution, oil refining, and electricity generation (including renewables). Concomitantly, the *EDP – Energias de Portugal* is one of the largest Portuguese business groups centered on the generation and distribution of electric power, including from renewable sources, but also on the distribution of natural gas.

5.4.2. POEM's Strengths

According to the interviewed key-actors of the Portuguese MSP process, the POEM enclosed plenty of benefits and opportunities. Because a large number of different views were expressed, only the opinions that were shared at least by three informants are addressed in this section and presented in Table 5.5[150].

The POEM strength that collects higher agreement among informants (c. 58%) is its intention to materialize a **MSP instrument for Portugal**. The POEM materialized the first approach towards Portuguese MSP, constituting its baseline. It was developed from "scratch", which is a major opportunity for the development of a proper spatial planning system because it is not constrained by interests already "in place", and was developed to become a basis for future work, an operational tool, and a guiding document. As stated by an informant from the Portuguese State «*the POEM has the virtue of having been made and of existing*».

The second most commonly identified strength of the POEM (mentioned by c. 53% of informants) is that it allowed, for the first time, for a characterization of Portuguese **present and future maritime uses**. The POEM was the first great gathering of spatial information on existing Portuguese maritime activities, identifying and systematizing all available information, which was scattered across several entities, and compiling it into a single repository (a geographic information system). According to an informant from the academia, this substantiates the first phase of any proper planning system by providing decision-makers with the best available information. In fact, properly knowing the socioeconomic and biophysical characteristics of the Portuguese maritime space would allow for a «*higher probability of allocating the right activities to the right place*» (member of the MT). This also makes up the major reason why an informant from the Portuguese State recognized the POEM as a key baseline for future developments in Portuguese MSP. Concomitantly to such mapping of existing ocean uses, POEM also includes several projections and scenarios regarding future ones, as well as an identification of related potential conflicts and solutions. Overall «*the POEM has considerable merit for carrying a lot of information into a corpus that is identified, recognized and available*» (senior legal adviser external to the process).

[150] A list of additional strengths can be found in Table S5.5, SM.

Table 5.5. Main responses to Question 2a: What are the main benefits or advantages of the POEM? Five informants (13.2%) did not respond. Because some informants have answered multiple reasons, percentages do not sum to 100%. NGO: Non-governmental organization.

	Existence of a national MSP instrument	Identification of ocean uses	Real working team	Public participation	Improved communication	Holistic view across activity sectors	Developed by inter-ministerial commission	Developed as Sector Plan	Awareness on economic potential of the ocean	Environmental assessment	Open to revision/adaptation	Importance of data sharing	Network of people with expertise on MSP	Awareness on licensing gaps/competences
Total Count	**22**	**20**	**18**	**17**	**13**	**10**	**9**	**6**	**5**	**5**	**5**	**4**	**4**	**3**
Total percentage	57.9 %	52.6 %	47.4 %	44.7 %	34.2 %	26.3 %	23.7 %	15.8 %	13.2 %	13.2 %	13.2 %	10.5 %	10.5 %	7.9 %
Count by Primary Role														
Participant in the POEM	12	9	15	10	11	10	7	4	4	4	5	4	4	3
Participant in the MSP law	2	7	1	3	0	0	1	0	0	0	0	0	0	0
External observer	8	4	2	4	2	0	1	2	1	1	0	0	0	0
Count by Sector														
Portuguese State	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Government agency	8	6	9	6	7	5	5	2	2	2	3	2	3	2
Academia	7	6	5	4	4	4	2	3	1	3	1	2	0	1
NGO	4	4	2	5	1	0	2	0	1	0	0	0	0	0
Independent consultant	2	2	2	2	1	1	0	1	1	0	1	0	1	0

A third strength of the POEM, and another that collects a lot of agreement among informants (c. 47%) is that it was built by a working group that really **worked as a team**. Within each of the several meetings that took place to develop the POEM, all members of the MT actively participated, expressing their opinions, questions and concerns. Meetings' minutes were made available to all participants, and could even be improved by them. Participants were truly motivated to participate and, as a result of such participation, the POEM mirrored the ideas of all. To a member of the SEA team this led to a strong sense of community. «*The POEM created a sense of community among the different sectors, because of its development methodology that (…) was extraordinarily innovative for Portugal, and not only for Portugal (…) I have been telling the POEM "story" in other countries and everyone thinks that it is remarkable how all sectors, with their different objectives, had such a convergence capacity (…) and this led almost to an activism (…) people were willing to take responsibility for the POEM, which is very rare in Portugal*». Other informants specifically mentioned the development of a "team spirit" among government agencies, which also facilitated a true inter-sectoral collaboration. This joint institutional investment and participation in the POEM is regarded as an important strength, especially because the majority of entities with responsibilities over the Portuguese maritime space were represented in the MT.

Fourth, c. 45% of informants identified that the POEM was largely subjected to **public participation**. Informants advocated that the POEM was discussed at different stages of its development, in different environments throughout the country, and with stakeholders from different maritime sectors. In fact, the POEM had a number of dissemination panels, thematic workshops, thematic public sessions, and seminars[151]. Concomitantly, it was subjected to a public consultation process, where all interested parties had the possibility to formally express an opinion. This therefore contributed to a large participation and to the gathering of important contributions. Such public sessions were not only a good kick-start for discussion but also allowed for adjustments in the plan by listening to the points of view and concerns of different entities and individuals from outside the POEM team. According to a member of the CT, while thematic workshops contributed to define POEM's strategic objectives, the thematic public sessions, which took place during the formal public consultation process,

[151] Information on the timeline and contents of these dissemination actions are summarized in Figure 5.5.

highlighted for the first time several use conflicts that had not been revealed so far in the development of the POEM.

A fifth strength, which directly stems from having a real working team, is the **improved communication** between national entities involved in ocean and coastal management (c. 34% of informants). Having all POEM's participants sitting at the same table, sharing opinions, reconciling interests, learning how to communicate and finding a common understanding among them was, definitely, a major governance asset of the POEM. In the end of the process not all entities agreed, but through a lot of negotiation they jointly reached a consensus and, as stated by member of the MT, the result was a "good work".

This improved communication led, in turn, to another POEM's strength, namely, attaining a **holistic and integrated view** across all activity sectors (c. 26% of informants). Unlike several Portuguese processes where each sector is solely focused on its own interests and problems, in the POEM everyone discussed the Portuguese maritime space present and future perspectives in a crosscutting, integrated way. By becoming globally aware of each other's objectives, concerns and constraints, almost in a "forum-like approach", the different sectors understood that what they do is interconnected, that they shared many commonalities and that, in many cases, they could develop synergies instead of competing for common areas of interest. The POEM worked, therefore, as a "launch pad" for an integrated action, demystifying potential conflicts and promoting the resolution of real ones beforehand. «*The POEM was an important facilitator for the Portuguese maritime space*» (member of the CT).

Seventh, the POEM was built under a very "innovative approach" because it was developed by an **inter-ministerial commission**, instead of by a university team, by a government agency or by a ministry as it is most commonly done (c. 24% of informants). «*The plan was developed by the CIAM (…) we were the coordination group not the technical team, the technical team was the CIAM plus the coordination group (…) the POEM was built by an inter-ministerial commission and all of its elements, they were the ones who wrote it, we only organized and harmonized everything, we just designed the methodologies for each phase, of how to do it*» (member of the CT). A informant, member of the MT stated that «*for the first time I experienced a spirit of inter-sectoral cooperation (…) it was the first plan I took part where the plan was actually developed by public administration technicians (…) it was developed by the people and that was one of its major advantages*». In fact, usually an external consultant develops the work and then the public administration "merely"

expresses its opinion, but not in this case. To a different participant, member of the SEA team this makes the POEM a "governance case-study" because it is very rare to have inter-sectoral and intra-governmental committees collaborating under the same purpose. A NGO representative, and external observer, was also very impressed with the way the public administration was behaving, by working as a facilitator for the discussion on MSP. The fact that it was developed by an inter-ministerial commission, and under a specific political mandate also allowed for the process to be "completed", i.e. to have a beginning, a middle and an ending. Also, there was a clear definition of responsibilities, and everyone knew who was who in the process, which is rare. «*Had not been the CIAM itself to develop the POEM, and we would still be working today to complete it*» (member of the CT).

A number of informants (c. 16%) also identified as a strength the legal framework upon which the POEM was developed – i.e. a **Sector Plan**. As a Sector Plan, a legally binding instrument, the POEM would «*allow us to have a legal framework to settle conflicts and solve overlapping intentions at all levels (…) and solving them, theoretically, the best way*» (university professor, and external observer). The POEM was considered to be a Sector Plan with a "horizontal" nature, because instead of focusing on a single activity sector, such as tourism, aquaculture or fisheries, it was transverse to all the activity sectors that take place at sea, considering the "sea" itself as a sector. Concomitantly a scientist, and external observer, referred that contrarily to other types of spatial planning instruments that can only be revised three years after they come into effect[152], Sector Plans do not have a minimum period for revision and are always subject to changes "whenever the evolution of the perspectives for economic and social development determines so" [123]. This is perceived as an advantage, especially in the framework of actually having an adaptive management.

A ninth benefit, closely linked to the characterization of existing and future ocean uses, is that POEM led to an increased awareness on the **economic potential** of the Portuguese maritime space[153] (c. 13% of informants). In fact, by providing a "photography" of the Portuguese maritime space and allowing a spatial perception of the areas effectively being used, and more importantly the considerable large dimension of areas still available for future

[152] This was the case of Special Spatial Plans and Municipal Spatial Plans [123].

[153] However, some previous documents such as the Strategic Commission for the Oceans Report (2004) and the NOS 2006-2016 (2006) already addressed this subject.

developments where new business opportunities could be developed, the POEM had a very positive effect close to investors and the private community. Alongside, the POEM raised the attention of all activity sectors towards the ocean for the first time. As stated by an informant, member of the CT «*the biggest advantage was that sectors that had never seriously thought about the ocean (…) suddenly realized they could do things at sea, that their activities were affected by the sea and that from an economic point of view it could be very interesting*».

Another strength of the POEM, as identified by c. 13% of informants, is that it was subject to **environmental assessment**. Although POEM's SEA was mandatory[154], a member of the SEA team stated that it was a highly participated and integrated process, because since the beginning of the plan's development there was a continuous communication and collaboration between the CT and the SEA team, which is rare. Furthermore, POEM's SEA was also able to positively impact the plan by fostering the development of its strategic dimension. A university professor, and external observer, also highlighted the fact that because of the plan's geographical focus on the national level, the Portuguese maritime space was (environmentally) assessed as a whole, which constituted the proper way to account for cumulative pressures and threats.

The fact that the POEM envisages the possibility of **revision and adaptation** is also identified as a strength (c. 13% of informants). The POEM was expected to be permanently updated and adapted in face of new conditions, such as new information on biophysical resources, and areas allocated to new maritime activities. As stated by a member of the MT «*one of POEM's advantages is that it was an open plan, and should be subject to revisions and improvements (…) therefore it was not rigid, it was adaptive*».

Twelfth, the POEM allowed entities to become aware of the major benefits and relevance of **sharing information** (c. 11% of informants). At the beginning of the process several government agencies were reluctant to share their data. «*They believed that the data was theirs and that they did not have to share it for free with anyone*» (member of the CT). However, by political determination (i.e. a top-down approach) all participants had to contribute with the information they possessed to the development of the POEM. By the end of the process all involved entities had provided their data, but more importantly, had understood how

[154] In line with Portuguese and European legislation (see Section 5.3.1).

essential and significant this was for the process' development. «*People learned something (…) it was a step forward, and it was extremely important*» (member of the CT). «*Every activity sector, every ministry and general-directorate had a bit of spatial information on the Portuguese sea (…) gathering such information (…) was a huge victory (…) it was really a huge achievement and success for the POEM leading team*» (member of the MT).

Thirteenth, the POEM fostered the development of a **network of people and entities** with expertise on (and better prepared to deal with) MSP – c. 11% of informants. In fact, all entities that participated in the POEM became connected by learning on each other's existence and on the pathways to communicate, thus forming a network that remained after POEM's ending. Concomitantly, the know-how gathered within POEM's development process allowed Portuguese entities to be more acquainted to MSP, which was then reflected for example in the Portuguese contribution to the project Transboundary Planning in the European Atlantic (TPEA) [155]. «*It would not have been possible had the POEM not existed in the first place (…) we would not have the know-how*» (member of the CT). The same informant further stated that the previous experience with the POEM «*was an asset, for example, when communicating with Spain [as a TPEA partner] who had never had this discussion on MSP (…) they have individual sectoral processes (…) and had never seen an integrated approach*». Concomitantly, a member of the MT mentioned that as TPEA partners «*we were the only ones who knew what we were doing (…) we began to lead the process quite easily (…) and at this point TPEA is following the Portuguese approach to MSP*». The experience gathered with the POEM is also perceived as an advantage to the development of the subsequent MSP framework law, because it raised questions, and promoted discussions and brainstorming regarding the legal framework for MSP in Portugal.

Finally, a fourteenth strength of the POEM is that it led to a greater understanding of Portuguese maritime **governance mechanisms**, namely on licensing gaps, on entities' competences regarding licensing the use of the maritime space, and on implications for legislation (c. 8% of informants). Among the eight structuring management measures[156] of the POEM Action Program, one pertains to the creation of a one-stop shop for maritime licensing

[155] The TPEA project involved ten governmental and research partners from Portugal, Spain, Ireland, and the UK. It was co-financed by DG MARE and intended to develop a commonly-agreed approach to cross-border MSP in the European Atlantic region (see more information at [161]).

[156] Measures that have priority over the remaining and whose implementation must be ensured in the short term (6–12months). POEM's management measures are analyzed in Chapter 3, Section 3.3.

"that allows for information and for the adoption of new ways of organizing and conducting procedures, with improved speed, transparency and efficiency, and that ensures articulation between the variety of entities with jurisdiction or specific competences over the maritime space, and the ones who use the maritime space" [157] [89]. In addition to identifying the set of eight structuring measures, the same section of POEM's Action Program establishes that a work will be developed regarding licensing and simplification of procedures, in order to ensure the articulation between different entities with competences over the maritime space and the ones that use the maritime space, therefore promoting processes' clarity and transparency, and strengthening the governance system.

[157] Measure *E.1.3* of the POEM Action Program.

5.4.3. POEM's Weaknesses

Alongside the identification of several strengths, interviewed key-actors also identified a number of limitations and shortcomings in the POEM. Because of the large number of views that was again expressed, only the opinions that were shared by at least three informants are addressed in this section, and presented in Table 5.6[158].

The first identified weakness of the POEM, and the one that gathers the largest agreement among informants (c. 42%), is the fact that the POEM was **published as a study**, i.e. with no legal or regulatory formal authority. «*The POEM was a starting point, it was better than this "void", this vagueness that we are currently experiencing*» (scientist and external observer). The main aspect here is whether there is any relevance, or utility, in having a marine spatial plan that is not legally valid. And both participants in the process and external observers expressed their reservations. «*What is the POEM for, when it has no legal strength?*» (NGO representative, and external observer). «*Only at its final stage [of implementation] would the POEM be worth something*» (member of CT). Concomitantly, a number of informants expressed a feeling of disappointment with the process itself, and a loss of confidence in it, because the initial purpose of developing a plan was not fulfilled. «*At the beginning the POEM followed rules that were not kept until the end, which is not beneficial towards both the process or the trust developed among different actors (…) there was a breach of confidence in the process, and that should never happen (…) for the sake of participation*» (member of MT). Concomitantly, some informants' advocate that POEM's ending was not only disappointing but also unclear. More than a year after its publication in the DGPM website, several participants in the process were still not fully aware of what had happened with the POEM. «*No one understood where the POEM ended, I mean, if it was ended at all. The POEM was to be transposed into national law but that happened in a very unclear way*» (member of MT). The fact that the work initiated had no continuity, not only damaged the credibility of the process, but also raised issues regarding POEM's utility for the public administration, because there was a large investment in the plan that did not have any return. To a member of the SEA team POEM's "ending" also led to a risk of oblivion, not only regarding the plan itself – despite the recognized efforts of the DGPM on the contrary – but also the strong sense of community that was developed, the so called "team spirit".

[158] A list of additional weaknesses can be found in Table S5.6, SM.

Table 5.6. Main responses to Question 2b: What are the main disadvantages or limitations of the POEM? Four informants (10.5%) did not respond. Because some informants have answered multiple reasons, percentages do not sum to 100%. NGO: Non-governmental organization.

	Unclear ending / / published as study	Insufficient public participation	Excessively broad and generic (no strategy)	Differential quality of data on ocean uses	Reduced involvement of scientific community	No operational mechanisms for ocean use	Gap on baseline biophysical data	Environment as a sector	Developed as a Sector Plan	No inclusion of Autonomous Regions	Reduced readability (long/dense document)	No objectives	Inappropriate time frame (too long/too short)	No articulation with coastal zone	INAG as coordinating entity
Total Count	**16**	**14**	**13**	**11**	**9**	**8**	**7**	**6**	**5**	**4**	**4**	**3**	**3**	**3**	**3**
Total percentage	42.1 %	36.8 %	34.2 %	28.9 %	23.7 %	21.1 %	18.4 %	15.8 %	13.2 %	10.5 %	10.5 %	7.9 %	7.9 %	7.9 %	7.9 %
Count by Primary Role															
Participant in the POEM	10	7	5	5	4	2	5	3	3	2	1	1	3	1	1
Participant in the MSP law	2	2	4	3	2	3	1	1	1	1	0	1	0	2	2
External observer	4	5	4	3	3	3	1	2	1	1	3	1	0	0	0
Count by Sector															
Portuguese State	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Government agency	6	3	3	4	1	1	3	1	2	1	0	1	1	1	0
Academia	6	9	6	3	6	1	2	5	2	1	1	1	2	0	1
NGO	3	1	2	4	1	3	2	0	0	1	3	1	0	2	2
Independent consultant	1	1	2	0	1	2	0	0	1	1	0	0	0	0	0

Second, a large number of informants (c. 37%) identified the **insufficient public participation** as a major weakness of the POEM. Having the general public involved in a continuous way and from the beginning, especially in a project of this nature, would be a major asset. It would not only make the public aware of POEM's contents and goals, but also help resolving conflicts and getting people to support the plan. The lack of such participation, however, seems to be related to three different aspects. First, some believe that, Portuguese citizens are in general not used to actively participate in public consultation processes. They do not relate or feel "moved" to such processes and, consequently, they do not get properly involved. For that reason, the lack of public participation in the POEM can be perceived, to some extent, as an extension of a Portuguese broader issue. Second, at the time the POEM started, MSP was still an "emergent" topic in Portugal and for that reason its relevance went further unnoticed by the general public. «*People are still learning on the strategic importance of having MSP processes*» (member of MT). «*MSP is a topic to which people do not yet relate (…) someone should have explained them (…) but that did not happen*» (legal adviser, and external observer). Third, the general public only got to participate in the POEM during the formal public consultation phase, which only occurred at «*a late stage of the process (…) when everything was already defined*» (NGO representative consulted in parliamentary hearings), and which was considered to be too short[159], especially because it did not occur from the beginning. Although the POEM had a large number of workshops and public session at its initial stage, these seem to have been somewhat limited to a number of stakeholders such as NGOs, industries and the scientific community. Also, the absence of a report giving feedback on the results of the public consultation, namely stating which contributions were integrated into the plan, was also considered to be inappropriate[160]. To two informants consulted in the hearings process, overall «*the public consultation was just to comply with legislation*» and «*saying it is available for public consultation is not enough (…) that is not participation (…) that is no more than democracy being established in public notices and walls*».

[159] The public consultation phase occurred for almost three months (see Figure 5.5).

[160] However, the development and dissemination of such report is neither mentioned, nor established as mandatory in Ruling No. 32277/2008.

A third weakness, and another that collects a lot of agreement (c. 34% of informants), is that the POEM is **excessively broad and generic**, not materializing an actual spatial planning for the Portuguese maritime space, neither specifying a strategy or a long-term vision for the future use of the Portuguese maritime space. One of the major criticisms to the POEM is, in fact, that it stayed halfway, "merely" compiling a large amount of baseline information and identifying measures and guidelines. «*The process was deeply incapable of developing true spatial planning solutions (…) and failed completely (…) in the end it was limited to overlapping layers of information, and it was unable to make choices, decisions, to set priorities, to evaluate strategies*» (member of the MT). A member of the CT and a member of the SEA team both recognized that during its development the POEM lost its initial focus on developing strategies and a vision for the future of Portuguese ocean's use, and the main work rested on characterization and analysis. «*People should have discussed strategies (…) however only the governance dimension was properly discussed, and that was because it was at stake who had power over what*». Hence, as stated by an ocean policy specialist consulted in parliamentary hearings, in the end «*the POEM was too vague (…) it was everything and it was nothing*».

Another limitation of the POEM that collects a significant agreement (c. 29% of informants) pertains to **discrepancies in the quality of the available information**, this time regarding ocean uses. While some areas of the Portuguese maritime space were properly characterized, having a large amount of good information available, others were largely unknown because the information was absent, had reduced coverage or came from unreliable sources. MSP processes, however, need baseline information to be comprehensive in order to ensure the quality of decision-making, because if planning and management decisions are based in incorrect information sooner or later there will be «*a collision with the reality*» (university professor consulted in parliamentary hearings). Identifying and recognizing areas where information is unavailable is, therefore, just as important as collecting and compiling available information, namely because it also promotes that such information is further generated. However, according to a NGO representative consulted in parliamentary hearings, this did not happen in the POEM, where a number of areas were classified and mapped despite the acknowledged lack of information. «*There are a lot of spaces that were identified with one color but that should have stayed as grey areas, because in reality there was no information*». This issue of data unavailability also seems to be related to a chronic problem related to data

sharing. Public administration entities are not used to working together, let alone to share their data. And although there was a political indication determining that all entities had to contribute with the information they possessed, some informants advocate that not all existing information was made available to the POEM. Concomitantly, there was an extra challenge of harmonizing and compiling the data provided by all the different entities into a single information system, because the information was available at both different formats and different spatial and temporal scales.

A fifth, and central, weakness of the POEM is the lack of a substantial **participation from the scientific community**. Several informants (c. 24%) advocated that the scientific community was not properly involved in POEM's development, namely through a structured process prepared in advance. And, because the majority of biophysical data is produced and kept by scientists, this lack of involvement also explained why such data was not made available to the plan (as addressed below). According to a member of the CT, the person that had responsibility over the scientific representation of the MT wrote an email that circulated through all Portuguese research centres and State laboratories, inviting them to provide all the available information on marine biophysical resources spatial distribution, to be used in the POEM. This invitation was however poorly received by the scientific community, and that was why the information was not provided. «*The science representative had the ungrateful role of sending an email (…) to collect all the digital and editable data from the scientific community to be used in the POEM (…) and a major war began with the scientific community, who questioned the POEM's team competences to develop a marine spatial plan (…) the email was sent to the entire list of laboratories and research centres, who in turn joined forces to reply (…) they were convinced that marine spatial planning should be carried by biologists (…) because they did not know what a spatial plan was, above all there that much misinformation*». To a different participant in the POEM, this non-involvement of the scientific community also resulted from an inappropriate delegation of responsibilities within the scientific representation of the MT. According to such informant, when the MT was appointed the responsibility over the scientific representation was delegated from a Full Professor to an Associate Professor. The later, in turn, and due to time constrains delegated it to a Senior Researcher. «*We were already on the third level of leadership and obviously at that level nothing was going to happen (…) it is not up to the third level to tell university professors they have to participate in the POEM*».

Sixth, the POEM did not encompass the **operational mechanisms** to allow ocean's use (c. 21% of informants). Namely, it lacked a legal framework for licensing the use of the maritime space therefore not allowing for a "materialization" of MSP decisions. According to a member of the Portuguese State «*the POEM lacked a framework for action, it lacked the mechanisms to allow the use of the sea (…) it had a lot of work compiled and organized (…) but it lacked this final stretch*». Instead of a ruling, the POEM had management guidelines that needed to be implemented through sectoral or territorial legislation. However, the development of new ocean uses would require «*many laws, licensing, and administrative processes*» (member of the MT) that were absent from the POEM. This was an aspect that was raised a number of times during MT meetings, where representatives from the Ministry of National Defence highlighted the need for developing a new legal framework related to spatial planning, as well as a licensing scheme, otherwise marine zoning would not be effective [162, 163] [161].

A seventh weakness of the POEM, which is closely related to the lack of participation from the scientific community, is the deep **gap on the baseline biophysical information** upon which it was built (c. 18% of informants). Biophysical data in the POEM was limited to both the identification of nature conservation areas (e.g. marine protected areas, Special Protection Areas, Sites of Community importance, and Marine Important Bird Areas) and the occurrence of species and habitats that legally required the designation of Natura 2000 sites [125]. This is limitative for two major reasons. First, because due to the «*acute shortage of baseline information*» (member of the CT) both the planning and the decision-making processes had to be built on top of great uncertainty, which has a considerable degree of risk. Second, because by not incorporating biophysical data in a comprehensive way, the environment cannot be properly considered in the plan and «*a consolidation around ecosystems conservation, the environmental pillar, is not possible*» (member of the MT). Concomitantly, having more biophysical data would allow for a better definition of criteria for the selection of maritime activities. Two informants that participated in POEM's development believed that if the

[161] Concomitantly, according to Calado and Bentz [27] under the existing legal framework at that time, none of the agencies responsible for developing the POEM, i.e. first INAG and then DGPM, had full empowerment to "efficiently coordinate all the actions needed to assure a *one-stop-shop* for maritime licensing and development".

Marine Biodiversity Information System (M@rBis) Project had worked properly[162], this issue would have been settled.

Eight, the fact that the POEM considers the **environment as a sector**, instead of as a cross-cutting aspect of the planning process, is another important identified limitation[163] (c. 16% of informants). Some informants believe that the POEM has a predominantly economic-based approach, focused on fostering economic exploitation and resolving use-use conflicts, rather than on properly balancing economics with environmental sustainability. «*The plan is more focused on the sustainability of the maritime uses, rather than on the sustainability of marine goods and services*» (scientist and external observer). «*The plan's underlying strategy cannot be licensing oriented, it has to be management oriented because management is much more than licensing*» (member of the CT). Furthermore the designation of new marine protected areas is not envisioned in POEM (at least it is not identified in POEM's spatialization) which is a major loss of opportunity. «*MPAs were not a concern in POEM, and the articulation with MPAs is merely mentioned, not made*» (individual consulted in parliamentary hearings). This is why a university professor, and external observer, stated that an ecosystem-based view is completely absent from the plan.

Another identified weakness concerns the legal framework upon which the POEM was developed (c. 13% of informants). As a **Sector Plan** the POEM would only be legally binding on public entities, i.e. the administration, not being directly applicable to private parties[164] [123]. As stated by a senior legal adviser, and external observer, «*defining a system for the use of the maritime space that cannot be applied to private parties is to stay halfway through the process, it does not solve the problem*». The same informant provided a practical example: private parties that want to install an off-shore aquaculture consult the POEM. They know, however, that because the POEM is a Sector Plan it is not mandatory to them, i.e. they are not legally obliged

[162] The M@rBis Project was started in 2008 under the coordination of the Task Group for Maritime Affairs (EMAM). M@rBis is a marine biodiversity georeferenced information system, whose main goal is to provide the necessary data to fulfil Portuguese commitments on extending the Natura 2000 Network to the marine environment. Currently, the outputs of the project include an extensive number of scientific publications and communications, but no information system is currently in place (for more information see ref. [164]).

[163] Chapter 3 analysis in detail how environmental sustainability is considered in the POEM.

[164] At that time, Portuguese legislation on spatial management instruments (i.e. Decree-Law No. 380/99) stated that *Sector Plans*, Regional Spatial Plans, Inter-municipal Spatial Plans, and the National Program for Spatial Planning Policy, were legally binding only on public entities. Only Municipal Spatial Plans and Special Spatial Plans were legally binding to both public entities and private individuals.

to it. In practical terms, this means that if the aquaculture installation is denied based on the plan, the private parties may contest the decision; if on the contrary the decision is positive, the plan does not provide legal certainty to the investor because other private party may contest the decision. «*The POEM is therefore very unclear and ineffective*». The Sector Plan framework was also indicated as inappropriate for developing a marine spatial plan because the "sea" is not a sector, and because marine spatial plans tend to have a cross-cutting nature instead of a sectoral one. By encompassing all activity sectors, the POEM was thus not considered to be a true Sector Plan.

Tenth, the POEM does **not include the entire Portuguese maritime space** (c. 11% of informants). When the POEM was started it was intended to include the entire EEZ (continental, Madeira, and Azores portions) and extended continental shelf. However, the Madeira and the Azores ended up not being encompassed in the POEM, which is especially negative as together they represent c. 81% of the Portuguese maritime space[165]. As stated by a member of the CT, the POEM was not capable to defining a global model that would fit the entire area, i.e. a common methodology that would then have specificities for Madeira and for the Azores. «*It does not make sense for Madeira and the Azores to develop marine spatial plans on their own (…) they should do it in the scope of a common strategy, especially because they accompanied the plan's development, that is, they were involved and they agreed with the way methodologies were developed (…) there should be a common basis and then processes with regional focus*». Regarding the Madeira, there was a commitment, which continued after the end of the POEM, between central and regional governments to jointly develop a marine spatial plan for the region. This plan would follow the POEM methodology, with necessary adaptations, and would benefit from a team of specialists from the POEM to support the development of such plan. This was, however, not possible due to budgetary constraints and, to date, the Madeira have never developed any MSP process. On what concerns the Azores, they decided to develop the *Plano de Ordenamento do Espaço Marítimo dos Açores* [166] (POEMA). The POEMA had a very strong focus

[165] The Azorean EEZ represents 55.21% of the current Portuguese maritime space with an area of 953 633 km^2 while the Madeira EEZ represents 25.83%, with an area of 446 108 km^2. These percentage values do not take into account the continental shelf beyond the 200 nm, which corresponds to an additional area of 2 150 000 km^2.

[166] This literally means "Azorean marine spatial plan". In 2010, a ruling from the Regional Government determined the intention to develop the POEMA under the responsibility of the Regional Secretariat for the Environment and the Sea. The POEMA was to be developed within a year, and its advisory committee was

on the environment, considering it as a limiting factor to the development of maritime activities, and followed a slightly different approach from the POEM. «*The goal was to maximize the use of the maritime space according to (…) economic, social and environmental variables (…) first of all the areas not to be used were defined (…) to ensure that the environment was safeguarded*» (member of the MT). Just like in the mainland, the POEMA was to be subject to environmental assessment, and elements from POEM's SEA team had been initially contacted to participate in it, using the same methodology of the POEM. However «*the Azores decided (…) to do their own SEA (…) at the beginning I was contacted to potentially participate in such assessment (…) the INAG was promoting the use of a similar methodology in the Azores regarding both the plan and the SEA (…) but the person responsible for the POEMA said they had their own SEA methodology, and that they would follow a different approach (…) I don't know if it was already done or not, but I never heard anything*». The Azorean approach towards MSP was also different by not being focused on a strict timeline, but instead on ensuring that all stakeholders were comfortable with the process. As stated by a member of the MT «*there was not any hurry to reach the end of the process (…) the adopted approach was not to rush things, to let the people adapt (…) providing them with information (…) so that the process could be developed positively (…) it takes time (…) but maybe that was not possible in the mainland (…) in the mainland it had to be different due to the complexity of matters*». At the present date, however, the POEMA is still not finalized[167].

Another identified weakness is that the POEM is very **long, dense, and difficult to read** (c. 11% of informants). The POEM entails eleven main documents, organized into four main volumes, corresponding to a total of c. 1000 pages[168]. These documents are not only excessively long, but also have a "hermetic language" that increases their complexity and decreases their transparency. A member of the MT advocated that as a result of having reports with these characteristics «*they end up staying with only a handful of technicians or, worst, being useless (…) it takes months for an outsider to understand them (…) I, who was involved, still reached a point where I could not handle the reports (…) and stopped reading them (…) I would only look at what*

composed by all member of the Interdepartmental Commission for Maritime Affairs of the Azores – CIAMA [165].

[167] In 2013 the Regional Secretary of Natural Resources recognized that the POEMA was having some delay, namely because of the regional legislative elections of 2012, and subsequent institutional changes [166].

[168] These numbers exclude summary reports, such as the POEM Synthesis Report or the non-technical version of the Environmental Assessment Report. Only the documents listed in Section 5.3.1 are considered in the counting.

was related to my sector and stopped worrying about the rest». Because it takes too much time to read and understand these documents, decision-makers may end up not paying proper attention to them, and public participation can also be hindered. This was additionally identified as a way of "non-transparency" that «*generates a feeling of disappointment to those who participate in the process*» (member of the CT).

A twelfth weakness, as identified by c. 8% of informants, is the **absence of specific objectives**. There are seven main goals for elaborating the POEM[169], but a set of specific objectives of the plan itself is not specified anywhere. It is not clearly stated where the POEM wants to go, or what it aims to achieve. And for that reason the plan gave in to pressures posed by the different participants and became "lost". «*It gave in to everything (…) there was no capacity to draw scenarios and assess them against a major objective, because there were no objectives to begin with (…) there were general goals, but no specific objectives (…) something that was missing from the POEM was a specific aim to be reached*» (member of the MT).

The **timeframe** for developing the POEM was also identified as a weakness, however, from two opposing perspectives (c. 8% of informants). First, some informants advocated that the initial period established to develop the POEM was too short. It was established that the POEM should be developed in less than a year, and such timeframe would not allow for example for a proper integration of the information gathered. «*I was really scared about the very short period we had to develop the plan*» (member of the CT). Second, given that the plan ended up taking almost four years to be finalised and published, it was advocated that the process was too long. Not only did this raise credibility issues because established deadlines were not met, and were instead largely exceeded, but also issues regarding the pertinence of the plan. «*After a couple of years the baseline studies of a plan are outdated (…) plans need to be adaptive and to be finished in due time*» (member of the CT). It was therefore emphasized that the POEM needed to be revised, updated and adjusted, if it was ever to be used.

Fourteenth, the POEM was not properly **articulated with coastal planning** instruments and strategies (c. 8% of informants). Throughout its documents it is never materialized how the POEM is to be linked to both coastal spatial plans (POOCs) and the National Strategy for Integrated Coastal Zone Management (ENGIZC). «*Some people believed that the POEM could be*

[169] These are identified in Figure 3.2, Chapter 3.

(…) completely disconnected from land (…) but there must be a common ground to establish a link, especially regarding coastal areas (…) such commonalities are referred in the POEM but not materialized there» (member of the MT). POEM's terrestrial limit is the maximum spring high water tide mark and, therefore, both estuaries and coastal lagoons are excluded from the plan [31]. A NGO representative consulted in parliamentary hearings further stated that this non-integration of coastal areas and estuaries in the POEM was «*a major loss of a unique opportunity*».

Finally, a number of informants (c. 8%) believed that a large part of POEM's weaknesses and limitations were due to it being **coordinated by INAG**. Although INAG had experience in developing several POOCs[170], it did not have an extensive experience in maritime affairs. It was argued that such lack of knowledge and expertise had limited POEM's potential and development process. «*The paradox was that the POEM was developed by INAG (…) and INAGT itself only had one or two staff members with expertise over the sea*» (NGO representative consulted in parliamentary hearings).

[170] As coastal spatial plans, POOCs applied from 2 km landward up to the 30 m bathymetry, except for areas under ports jurisdiction. There are nine approved POOCs in mainland Portugal, dating from 1998 to 2012, and six from these were developed under INAG's competences. The remaining three POOCs were under the responsibility of ICNB because their focus area corresponded mostly to areas included in the national network of protected areas [167].

5.4.4. Strengths of the MSP Framework Law

According to the interviewed key-actors of the Portuguese MSP process, the MSP framework law encloses plenty of benefits and opportunities. Just like in the previous sections, because a large number of different views were expressed, only the opinions that were shared at least by three informants are addressed in this section and presented in Table 5.7[171].

The first identified strength of the MSP framework law, and the one that gathers the highest agreement among informants (c. 29%), is that the MSP framework law was really **open to discussion and improvements**. The large majority of this set of informants corresponds to participants in the law development. While a law developer recognized that «*the parliamentary discussion will surely improve the law, it will strengthen it*», an individual consulted in parliamentary hearings advocated that the political will to openly discuss the law and to correct some of its problems, together with the fact that the Parliament really tried to incorporate the provided inputs, were very optimistic. In fact, instead of keeping the discussion merely among political groups, the Parliament decided to extend the law's discussion to key individuals related to ocean and coastal management. As stated by two different members of the 7-CAM, «*we could have limited ourselves to the opinions of each parliamentary group (…) instead representatives from entities that had already issued an official written opinion (…) came individually to provide their inputs (…) even those who were more critic, they came*» and «*this is a framework law, which is a bit different (…) it is more comprehensive and only makes sense if collecting a broad consensus, not only among political parties (…) but also with the scientific community and civil society*». The discussion thus benefited from a great "partnership" with people from the academia, NGOs, consultants and entrepreneurs from the maritime sector[172]. As a result of this thorough discussion process, there were many changes to the law[173]. «*We analysed the law point by point, we heard all hearings, and we then evaluated all suggestions in light of the ideology and philosophy of the law's original version (…) in the end there were tents of changes*» (member of 7-CAM). As stated by a different member of Parliament, it was

[171] A list of additional strengths can be found in Table S5.7, SM.

[172] See the full list of consulted entities in Table 5.3, SM.

[173] As a consequence of the parliamentary discussion: (i) forty-three points, from twenty-two different articles, were changed; (ii) four new articles, and six new points from other, pre-existing articles, were added; and (iii) one article, and four sub-points from other articles, were deleted. Some of the inserted changes are more substantial in nature, while others are of detail, such as small changes in numbering and language.

during the parliamentary discussion that for example the spatial planning system, a recognized positive aspect, was added to the law[174]. «*The initial versions did not include it*». Overall, «*the Parliament did a very detailed work to improve the government proposal, namely by including the contributions from all participants in the working group (…) as a result, the majority of the people involved in the working group now have their* fingerprints *in the law (…) I believe our analysis was very comprehensive*». Concomitantly, because the MSP framework law leaves many aspects to be defined in subsequent complementary legislation, i.e. it can only be implemented after the approval of such regulations, a number of informants believe that there will be an extra opportunity to discuss and improve some frailer aspects of the law. «*A part of the solution is certainly in subsequent diplomas*» (legal adviser, and external observer). Furthermore, as stated by a law developer «*just like the law (…) the complementary legislation will circulate through all ministries (…) being subject to criticisms and improvements by relevant departments*».

A second strength, and another that collects a lot of agreement (c. 26% of informants), is that it **establishes the rules for both ocean planning and use**. «*If we want to have an untouched seascape, we will not need anything (…) but in order to explore the maritime space (…) we will need to establish rules*» (member of 7-CAM Working Group). A number of informants advocated that not only is it essential to establish rules for ocean planning and ocean use, but that such rules also need to be mandatory to everyone[175]. By establishing clear and binding rules, the law provides the discipline and legal safety required by the State, society and private end-users. For example, up to the development of the law there was no legal regime in place for marine waters beyond the 1 nm limit[176]. Therefore, ad hoc procedures had to be developed whenever there were intentions to establish activities in such waters. The MSP framework law solves this pre-existing "legal vacuum", and some believe this to be one of its major advantages. «*Until the entry into force of the MSP framework law we lived in a bureaucratic tangle (…) there had been situations, namely regarding pilot areas, where specific laws had to be created for*

[174] Article 6, on the spatial planning and management system for the national maritime space, was added to the MSP framework law following the parliamentary discussion. For more information see Section 5.5.

[175] This is one of the identified weaknesses of the POEM because, as a Sector plan, it was only binding for the public administration and not to private parties (Section 5.4.3).

[176] Up to the 1 nm limit from the baseline, the use of Portuguese marine waters was ruled by the Portuguese Water Law and subsequent diplomas, i.e. Law No. 58/2005 [168] and Decree-Law No. 226A/2007 [169], and the allocation of use titles for water resources (i.e. concessions, licenses, and authorizations) was under the responsibility of River Basin Administrations – ARHs.

specific places (…) there is a high level of difficulty when we have to legislate on a case-by-case basis (…) and it is not reasonable to believe that we can have a sustainability vision when we do not have a holistic view on ocean's use» (member of 7-CAM).

The third identified strength is that, by regulating ocean use, the MSP framework law is expected to play a **"catalyst" role for the Portuguese maritime economy** (c. 21%). «*From an economic point of view, the law is everything I could wish for (…) it truly allows the use of the sea*» (individual consulted in parliamentary hearings). The MSP framework law has a strong emphasis on the economic use of the ocean, particularly by encompassing a licensing regime for ocean uses, which some believe to be the only way for the law to make sense. «*MSP must take place because of the economy (…) the law's objective could not be other (…) because if we do not have maritime activities we do not need marine planning (…) MSP derives from a need to prevent and solve conflicts between maritime economic uses*» (individual consulted in parliamentary hearings). This "innovative" nature of the law is expected to allow major advances in the socioeconomic exploration of the maritime space, namely by providing legal stability and certainty for ocean users and, thus, encouraging private investment. «*MSP advantages are, at first, legal certainty and legal security (…) until now potential investors could not take the initiative to legalize their intents (…) there was no itinerary to understanding the full extent of procedures needed to carry out investments in the maritime space*» (member of 7-CAM). Concomitantly, according to an individual consulted in parliamentary hearings, private parties do need to have guarantees because «*businesses at sea have much higher risks and costs than businesses on land*». Concomitantly, two informants consulted in parliamentary hearings further argued that the law should encompass a "green route" [177] for the sea, i.e. it should facilitate the flow of investments in maritime activities by removing or minimizing unnecessary obstacles and not posing extra administrative challenges. «*We will need major investments if we want the sea ever to be colonized, and to have such investments we need a law that encompasses a Green Route for the sea*», and «*we want a freeway, we want a Green Route (…) and if to ensure such Green Route we need to develop something, then we must do it (…) I will not discuss whether it should be done in one way or another, if it has to be yellow or to have spots, it simply has to be done*».

[177] This is a reference to the Portuguese *Via Verde* (which literally means "Green Route") electronic toll collection system. The *Via Verde* system allows motor vehicles not to stop at toll points all over the country, for example at highways and bridges, thus promoting an increased flow of traffic.

Table 5.7. Main responses to Question 3a: What are the main benefits or advantages of the MSP framework law? Fifteen informants (39.5 %) did not respond. Because some informants have answered multiple reasons, percentages do not sum to 100%. NGO: Non-governmental organization.

	Open to discussion and improvements	Rules for ocean planning and use	Fosters development of maritime economy	Ensures protection of marine environment	Basis for MSP system and MSP instruments	Promotes simplification of procedures	Proper parliamentary discussion	New planning system (different from land)	Open to articulation with terrestrial planning	Political consensus	Simple and concise	Having a MSP law
Total Count	**11**	**10**	**8**	**6**	**5**	**5**	**4**	**4**	**4**	**3**	**3**	**3**
Total percentage	28.9 %	26.3 %	21.1 %	15.8 %	13.2 %	13.2 %	10.5 %	10.5 %	10.5 %	7.9 %	7.9 %	7.9 %
Count by Primary Role												
Participant in the POEM	1	5	2	2	1	1	0	1	1	0	0	0
Participant in the MSP law	10	4	5	4	2	3	4	3	3	3	3	1
External observer	0	1	1	0	2	1	0	0	0	0	0	2
Count by Sector												
Portuguese State	4	4	3	4	2	1	2	3	3	2	2	1
Government agency	0	4	2	2	1	1	0	0	0	0	0	0
Academia	3	1	1	0	1	2	0	0	0	1	0	1
NGO	3	0	1	0	1	1	2	0	0	0	0	1
Independent consultant	1	1	1	0	0	0	0	1	1	0	1	0

Another identified strength of the MSP framework law is that it **properly safeguards the environment** (c. 16%). Besides stating that MSP "shall ensure the preservation, protection and restoration of natural values and of coastal and marine ecosystems, and the achievement and maintenance of good environmental status of the marine environment"[178], the MSP framework law established that "the granting of private use titles (...) determines the duty to ensure, at all times, the adoption of the necessary measures to achieve and maintain good environmental status of the marine environment and of coastal areas"[179] [29]. For these reasons a number of informants advocated that the environmental dimension is completely "shielded" in the MSP framework law, and that the importance of the environment as the foundation for MSP is clearly recognized. «*If we do not protect the marine environment, it is over (...) we will have killed our* money tree» and «*one premise established in the law, and which is imperative (...) is the premise of environmental protection*» (members of 7-CAM). A law developer clearly advocated that it would not make sense for the MSP framework law to "repeat" all the information regarding environmental preservation already enshrined in other legal documents[180]. Instead, the law highlights the need to ensure a good environmental status (GES) at critical points such as the law's principles and objectives. «*It would be very easy to make the law denser (...) GES definitions, descriptions and measures are identified in other diplomas, it makes no sense to repeat them (...) when we say that GES must be ensured it means either that it has to be maintained, or that it must be achieved (...) I believe it could not be clearer (...) although this seems to be a systematic comment*». Concomitantly, in what regards the preference criteria for establishing prevailing uses in case of conflict[181], the environment is considered as a "pre-condition". In fact, although environmental sustainability is not listed as a specific criterion[182] the identified criteria are only evaluated if good status on marine and coastal environments is ensured,

[178] Article 4, on objectives of spatial planning and management of the national maritime space.

[179] Article 17, on private use titles.

[180] Such as Decree-Law No. 108/2010, which transposes the MSFD into national law [20], or the Portuguese Environment Framework Law [98].

[181] These are (i) *major social and economic advantage* for the country (namely by creating jobs, qualifying human resources, value creation, and contributing to sustainable development), and (ii) *maximum coexistence of uses* (see Chapter 4, Section 4.2).

[182] A number of informants advocated that environment sustainability should be the first criterion for establishing prevailing uses in case of conflict. They therefore consider this to be a weakness of the MSP framework law (see Section 5.4.5).

otherwise the evaluation does not occur[183]. «*This is a precondition, an assumption, which is very clear in the final wording of the law*» (member of 7-CAM). Putting the environment side-by-side with the remaining criteria would underestimate its importance, besides opening the possibility for someone to potentially argue that, although not fulfilling the environmental criterion, a given use would be extremely relevant in socioeconomic terms. «*By doing so we would be underestimating and trivializing the importance of environmental sustainability*» (member of 7-CAM). Furthermore, the law considers the environmental assessment of new MSP instruments, which is another way to safeguard the environmental dimension. As stated by a member of the 7-CAM Working Group «*a thorough environmental assessment will now start taking place in the maritime space, because the granting of all use titles depends (…) on an imposition to safeguard the environment*» (member of 7-CAM). At the same time, a senior scientist, and external observer pointed out that «*if such assessments are carried with integrity and honesty, the environmental dimension will be ensured*».

A fifth strength is that the MSP framework law establishes the basis for a **spatial planning system and its instruments** (c. 13%). Many believe that this is a key and reassuring aspect of the law. The law identifies two new types of MSP instruments, Situation Plans and Allocation Plans[184]. These are fundamental and decisive because it is them that will substantiate the law, that is, MSP decisions are to be implemented through them. «*The law encompasses the baseline principles for a spatial planning system (…) we need spatial planning instruments in order for the State to preserve, protect and value the maritime space (…) I believe it is truly essential*» (member of 7-CAM).

Sixth, the MSP framework law aims for a **simplification of procedures** (c. 13%). As stated by a university researcher, and external observer, «*the simplification of procedures for licensing economic activities is one of the clearest objectives of the law (…) and an extremely relevant one*». According to a government agency representative, and participant in the POEM, the MSP framework law tries to solve a bureaucracy issue that was previously identified in the POEM.

[183] The MSP framework law states that "the following preference criteria must be applied to establish the prevailing use (…) provided that the good environmental status of the marine environment and of coastal areas is ensured" (article 11, on conflict of uses or activities).

[184] As defined in Chapter 3, Section 3.3, *Situation Plans* identify protection and preservation areas, as well as the spatial and temporal distribution of maritime activities, while *Allocation Plans* allocate specific areas for different uses and activities. After the publication of Decree-Law No. 38/2015, instead of Situation *Plans*, only *one* Situation Plan is mentioned. However, throughout this results section we will still refer to Situations *Plans* given that the MSP framework law, and not its MSP complementary regulations, is under analysis.

«*During POEM's development it was noted that someone willing to develop a maritime activity had to talk to a large number of government agencies (…) so one objective was to create a one-stop-shop for maritime licensing (…) and the law tries to answer that*»[185]. This is of especial relevance because, as pointed out by an individual consulted in parliamentary hearings, at the present moment investors need to wait around two-three years for use permits to be granted, a situation that is unbearable in most cases. «*Currently only crazy people who can wait that long get their licenses*». Consequently, and recognizing that «*the simplification of procedures is essential*» (member of 7-CAM), the government focused on developing instruments to ensure «*a simple and operative licensing system to speed up procedures*» (law developer).

Seventh, according to c. 11% of informants – all being participants in the law development – the **discussion that occurred under the GT-EBOGEMN** was appropriately carried. It was long, taking almost eight months, but easy because all political parties were very open-minded, and there was a lot of communication and agreement within the parliament. «*There was an actual debate among political parties, which is very positive (…) and the process was led by an interesting and dynamic person*» (individual consulted in parliamentary hearings). «*If there is a process within the parliament that worked well it is this one (…) all parliamentary parties showed an exemplary behaviour*» (member of 7-CAM). «*I am a member of parliament for several years now (…) and this was the more rewarding work that I ever developed (…) we worked as a team, despite our political party, which is rare within the parliament (…) we developed what it seemed to be a* multiparty *working group (…) it was a very interesting process*» (different member of 7-CAM). Concomitantly, the three main political groups (PSD, CDS-PP and PS) ensured that the parliamentary discussion was closely articulated with the Government. According to a member of the Portuguese State, commonly once a law proposal enters the parliament, the role of the government is formally over, because parliament has autonomy over the government. However, in some cases there are an inversion of roles and the government ends up having an excessive influence over the parliamentary activity, particularly when there are majority parliamentary parties. But not in this case. Here, the Government «*accepted to play a supporting role and provide assistance (…) it was available to issue opinions, to explain the work that had been developed and the intentions for the future (…) and for that reason the* triumvirate *of the Government, PSD and PS worked very well*».

[185] This objective of creating a one-stop-shop for maritime licensing is addressed in detail in Section 5.4.2, as one of POEM's identified strengths.

An eight identified strength of the MSP framework law is that in encompasses a completely **new planning system for the maritime space**, instead of expanding the one existing on land (c. 11%). Some informants believe that because there are fundamental differences between marine and terrestrial realms, a new and specific legal regime for the ocean planning would enclose more opportunities. First, the ocean tri-dimensionality allows different uses to be developed simultaneously, for example one in the water column and other in the seabed, a situation that could never occur in the terrestrial realm and that, therefore, is not encompassed in the land planning system. Second, humans do not inhabit the sea (and it is not likely that they will in the near future) and for that reason it does not make sense to use planning instruments that were originally designed in such context. «*The reasoning must be different otherwise we will only complicate*» (law developer). Third, there are no full sovereignty over the sea. Ocean use is limited by the international framework, and the concept of private property cannot be applied in the ocean. «*Nations have full jurisdiction over their territory in the terrestrial realm (…) in the ocean it is different (…) management of marine areas is a shared management, namely because there are no frontiers (…) it is different*» (spatial planning consultant). Fourth, the set of activities to be developed is completely different, and principles that rule both economic activities and social benefits are also not the same. Fifth, as stated by a member of the 7-CAM, a planning and management system that is characterized by having a local, a regional and a national dimension does not make sense in the sea. «*A major strength of the law is the difference from terrestrial spatial planning instruments (…) because a fundamental aspects is that maritime activities are nowhere similar to terrestrial activities (…) marine planning instruments need to be fewer, simpler and adapted to the maritime reality*» (law developer).

Ninth, at the same time it encompasses a new marine planning system, the MSP framework law defines the need to **link MSP and terrestrial planning** (c. 11%). The law does not specify how such link is to be achieved, but it establishes that the articulation and compatibility between MSP instruments and overlapping territorial plans and programs must be ensured, and that such link will be defined in ensuing legislation[186] [29]. For example, by applying to

[186] Article 27, on articulation and compatibility with other spatial planning instruments, states that "1–The articulation and compatibility between *MSP instruments* and other *legal or regulatory spatial planning instruments* affecting the national maritime space are to be made under terms to be laid down by a separate diploma; 2–*MSP instruments* must ensure their articulation and compatibility with *territorial plans and programs* whenever they focus in common areas, or areas that by structural or functional interdependence of its elements require an integrated coordination for planning" [29]. Concomitantly, article 45 of the Land

marine waters up to the 30 m bathymetry POOCs will have to be articulated with the new MSP instruments, namely Situation Plans. As stated by a spatial planning consultant «*these areas up to the 30 m bathymetry (…) are clearly a priority, because all pressures are located there*». However, law developers believe that such integration will not be excessively complicated. «*We want to articulate marine plans with coastal plans that focus on the same area (…) it will not be more complicated than to articulate terrestrial plans among each other (…) there must be a consultation of responsible entities and the development of pathways between land and sea, but no more than that*», and «*there will not be any difficulty (…) both sides have existing and potential activities, and ways to move from one to the other (…) common sense is a fundamental baseline, but the reasoning of the two management systems will be sufficient to ensure their coordination and integration (…) so far the discussions over spatial planning instruments have never reached dead ends*». Concomitantly, State representatives have ensured that the articulation between both laws was present throughout the development of both marine planning and land planning laws[187]. An ocean policy specialist believes that this link between land and sea is to be the next major "challenge", and the law carries an opportunity by promoting a central discussion on the subject. «*Here the work of universities will be priceless, especially because not even the EU yet knows how to establish the link between MSP and integrated coastal zone management*» (individual consulted in parliamentary hearings).

Planning Framework Law [170] states that "1–*Territorial plans and programs* must ensure their articulation and compatibility with *national marine spatial plans* whenever they focus in common areas, or areas that by structural or functional interdependence of its elements require an integrated coordination for planning; 2– The articulation and compatibility between *territorial plans and programs* and *national marine spatial plans* are to be made under terms laid down by *Portuguese law*". Italics by the authors. The second point of article 27 was only added to the MSP Law following the parliamentary discussion (but on the contrary, both point of article 45 were present in the Land Planning Framework Law since proposal stage).

[187] According to a public statement from a member of government [171], both laws were started within the same Ministry, i.e. MAMAOT, at the same corridor, and both benefited from the participation of entities involved in the development of one another. Moreover, both laws have a "symmetrical rule" regarding the articulation of land-sea planning instruments with the exact same wording (see previous Footnote), and this happened not by chance but to ensure such articulation. Consequently, to the same member of government, whether it should all have been done in a single law is a political decision open to criticism, but the hypothesis of having two legal instruments with their "backs turned at each other" is not reasonable.

Tenth, as recognized by c. 8% of informants – curiously all being participants in the law development – the MSP framework law gathered a **broad political consensus**. The law was approved with support from the main three parliamentary groups, i.e. PSD, CDS-PP and PS, which together represented c. 78% of the members of Parliament[188], being the «*only framework law to be approved with support from three parliamentary parties in this legislature*» (member of 7-CAM). Some informants believe this to be an extremely important aspect, and a major strength of the law. This will determine the long-term acceptance of the MSP framework law because, as stated by a university professor consulted in parliamentary hearings, in the absence of a political consensus the law could be left behind at the first political change. «*This law should raise consensus and trust in order to endure along different legislatures (…) and this law accomplishes that, this law will endure despite the leading political party (…) the voting already indicates it*» (member of the 7-CAM).

Eleventh, the MSP framework law is a **simple and concise** document (c. 8% of informants). According to a law developer, one of their major goals was to develop a system that was coherent and simple. The result was «*a law that is neither complicated nor complex*». As stated by a member of the 7-CAM, a framework law, by principle, should not define all issues. Instead it should be generic and have a framing nature. And the MSP framework law does that. «*It is a very generic and minimal law, but not in a bad way (…) it is truly a* framework *law*» (individual consulted in parliamentary hearings). Furthermore, as advocated by an ocean policy specialist, having a law that is as general, abstract and simple as possible is clearly a strength because in the future the MSP framework will have to undergo many adaptations, and these will be much easier to perform in a concise document.

Finally, some informants (c. 8%) believe that the simple fact of **having a MSP framework law** for the Portuguese maritime space is a strength. «*It is absolutely essential to have a framework law on marine spatial planning and management, it really is*» (member of 7-CAM).

[188] In the Portuguese 12th Legislature, 38.66% of the members of Parliament belonged to PSD, 28.05% to PS, and 11.71% to CDS-PP [172].

5.4.5. Weaknesses of the MSP Framework Law

Alongside the identification of strengths, informants highlighted a number of weaknesses in the MSP framework law. Just like in other sections, because of the large number of views only the opinions that were shared by at least three informants are addressed in this section and presented in Table 5.8[189].

The first identified weakness, and the one that collects the highest agreement among informants (c. 42%), is that the **marine environment importance** is not properly addressed in the MSP framework law. The law does not encompass any environmental objectives or sustainability measures, let alone does it follow the ecosystem approach or considers the environment as the basis for economic development. «*Environmental aspects come second when set against economic aspects, and it should be the other way around*» (individual consulted in parliamentary hearings). «*The law is not focused on the environmental dimension, it is focused on using the sea, prospecting the sea, going to the sea (…) the environmental dimension is a bit secondary*» (member of CT). «*Environmental quality is not an objective, it is a constraint, and a very blurred one*» (scientist, and external observer). Also, the MSP framework law seems to ignore an important lesson from the POEM, i.e. the environment cannot be treated as a sector. «*It is a lesson that all participants in the POEM learned (…) but the administration clearly did not, which is a shame (…) the words environment, biodiversity and ecosystem do not show up more than once in the law*» (member of CT). At the same time, the MSP framework law does not include a "safety valve" for whenever the environment is compromised. «*The polluter-pays principle needs to be enshrined in the law (…) it has to be stated that if users neglect the environment they will be held responsible (…) there must be the right to a coercive implementation of norms and to compensations in case of environmental damages (…) and such structure is not clear in the law*» (individual consulted in parliamentary hearings). This is especially important because as stated by an ocean policy specialist «*economic decision makers cannot be left without a conscience (…) because in such case there would not be a potential risk, there would be an actual danger (…) and we would have an extremely valuable, but yet doomed maritime economy*». Another issue that was raised is that the preference criteria for establishing prevailing uses does not explicitly include environmental sustainability as the first, preponderant criterion. By not doing so, and "merely" stating that

[189] A list of additional weaknesses can be found in Table S5.8, SM.

GES must be ensured, the law is opening the possibility for socioeconomic criteria to be put first in detriment to the environment.

A second weakness, and another to collect a large agreement (c. 39% of informants), is that the MSP framework law does not properly establish the articulation, nor the hierarchy, between the new **MSP instruments and other pre-existent spatial planning instruments**[190]. «*I do not understand at all what will be the link between this law and a sector plan, a regional spatial plan [PROT] or a municipal master plan [PDM]*» (member of CT); «*The transition between land and sea is completely left open (…) the law pushes it to future legislation*» (individual consulted in parliamentary hearings). To many informants, the fact that the MSP framework law only briefly refers the link between land and sea spatial planning systems is an important shortcoming. Furthermore, a special point of concern is the absence of a clear reference to how human uses will be managed in the coastal zone. Instead of "identifying, defining and characterizing (…) the articulation with the terrestrial management system, particularly in regards to the coastal zone and protected ecosystems" as proposed in the CNADS official opinion [173], the MSP framework law simply refers in its principles that integrated management must ensure "coherence between national MSP and terrestrial spatial planning, especially regarding coastal areas" [29]. Concomitantly, relevant Portuguese planning instruments such as POOCs and coastal protected areas plans, national laws such as the Environment Framework Law, the Land Planning Framework Law or the Water Law, and national strategies such as the ENGIZC and the National Strategy of Biodiversity and Nature Conservation, are never referred to in the MSP framework law.

[190] Namely, territorial plans, programs and other legal and regulatory instruments. The law's exact wording on this topic is specified in Footnote 186, Section 5.4.4.

Table 5.8. Main responses to Question 3b: What are the main disadvantages or limitations of the MSP framework law? Eight informants (21.1%) did not respond. Because some informants have answered multiple reasons, percentages do not sum to 100%. NGO: Non-governmental organization.

	Environment not properly considered	No clear articulation with other planning instruments	Economic-based approach	Reduced technical quality	Planning-licensing duality	Many aspects left for future legislation	No strategy for the future	New planning system (different from land)	Concessions duration	Reduced participation	No formal link to POEM	Low acceptance of Autonomous Regions	MSP instruments terminology	No marine protection & research fund
Total Count	**16**	**15**	**13**	**10**	**10**	**9**	**7**	**6**	**6**	**6**	**6**	**6**	**5**	**5**
Total percentage	42.1 %	39.5 %	34.2 %	26.3 %	26.3 %	23.7 %	18.4 %	15.8 %	15.8 %	15.8 %	15.8 %	15.8 %	13.2 %	13.2 %
Count by Primary Role														
Participant in the POEM	4	6	3	1	4	5	2	3	0	2	3	4	3	0
Participant in the MSP law	5	5	4	4	4	2	2	0	4	1	2	1	1	4
External observer	7	4	6	5	2	2	3	3	2	3	1	1	1	1
Count by Sector														
Portuguese State	0	1	0	0	1	0	1	0	1	0	0	0	0	2
Government agency	2	4	1	0	2	5	1	1	0	2	1	2	2	0
Academia	9	6	7	6	5	4	3	2	2	2	3	3	2	2
NGO	3	2	5	2	1	0	1	2	2	2	0	1	0	1
Independent consultant	2	2	0	2	1	0	1	1	1	0	2	0	1	0

A third identified weakness, identified by c. 34%, is that the MSP framework law has a strong **economic-based approach**. One provided example is the fact that a principle of "valuation and promotion of economic activities" can be found among the set of five main principles expected to guide Portuguese marine planning and management; according to different informants, this could hardly be considered as a principle, especially when set side-by-side to the ones of "ecosystem-based approach", "adaptive management", "integrated management", and "regional and transboundary cooperation and coordination" [29]. To a number of interviewees it is clear that the main objective of the MSP framework law is to foster and facilitate the economic exploitation of the Portuguese maritime space[191], namely by developing a fast and well-established licensing scheme. «*This law is fundamentally oriented to provide a logical context for the allocation of concessions and licenses, and I hope that in the subsequent legislation this can be improved*» (individual consulted in parliamentary hearings). The concept of allowing for the "privatization" of a "common" – i.e. the Portuguese maritime space – is perceived as a threat by many informants. «*A marine spatial plan cannot solely focus on distributing activities throughout the maritime space (…) a threat posed by the law is (…) the shredding of the Portuguese sea to offer it for sale, or for rent because we cannot sell a public good*» (university professor, and external observer). Here, the main expressed concern is whether such private use properly accounts for, and ensures, the public interest or not. A legal adviser, and external observer, argued that the main problem is the extremely vague justification that the law enshrines to allow for such private use[192]. Concomitantly, this privatization of the ocean is expected to benefit big investors over small traditional communities that rely on the sea for a living (e.g. fisherman). Furthermore, the preference criteria for conflicting uses also seem to be mostly economic-oriented (even though they are only evaluated if GES is ensured), which is not in line with the principles listed at the beginning of the MSP framework law, and which seem to be appropriate and balanced. «*We cannot say that the law has a sustainable perspective, that it reconciles the economic, social and environmental dimensions and then, later on,*

[191] Article 4, on objectives of planning and management of the national maritime space, states that "the objective of the spatial planning and management of the national maritime space is to foster sustainable, efficient and rational economic exploitation of marine resources and ecosystem services" [29].

[192] Article 16, on private use, states that "the private use of the national maritime space is permitted (…) for a use of the marine environment, marine resources or ecosystem services greater than the one obtained by common utilization" [29].

say that if there is a conflict of uses the economic dimension prevails (…) we need to ensure the balance (…) I believe this aspect is neither clear nor properly solved» (NGO representative, and external observer).

Fourth, a number of informants believe that the MSP framework law **lacks technical quality** (c. 26% of informants). A scientist and a legal advisor, both external observers, clearly stated that from a legal point of view the law was very "fragile". «*The law is indefensible (…) I cannot say it differently or in a more optimistic way (…) the possibility of having this law in force is very serious*». «*The law is weak, it is really weak*». Especially in its initial versions, the MSP framework law had serious errors that were not only unacceptable but that also undermined people's perception on the law's technical quality. For example, the law mixed environmental assessment definitions regarding Allocation Plans[193]. For this reason, people start questioning if other, less clear errors could also be present in the law. Concomitantly, a number of informants believe that the MSP framework law does not fulfil the minimum requirements for a "framework law" for two reasons. First, it is less thorough and comprehensive than a framework is supposed to be. «*It is not a framework law*» (several informants). Second, there are clear imbalances in the level of detail with which some aspects are addressed, some being excessively detailed while others are addressed superficially. For example, although the MSP framework law specifies the time length for licenses, especially important aspects such as the articulation between land-sea planning are left to be defined in ensuing legislation. «*There is a total imbalance in the way different aspects are addressed (…) some aspects are almost detailed whereas others could not be vaguer*» (legal adviser, and external observer). Although recognizing that there is a political will to discuss and improve the law, an individual consulted in the parliamentary hearings further stated that the law presents a number of omissions and inaccuracies that are not admissible and that need to be rectified. However, a further difficulty is that should have collected «*a set of minimum requirements in which to build from, in order to be possible to increase its technical quality (…) and I am not sure that this is the case*».

[193] An initial version, previous to Law Proposal No. 133/XII, stated that according to Portuguese legislation, Allocation Plans were to be subject to environmental impact assessment (EIA). This is wrong, because according to both European and Portuguese legislation on environmental assessment, *plans* and programs must be subject to *SEA* whereas only projects must be subject to EIA. In the final version of the MSP framework law this aspect was corrected, and the law now states that "approval of Allocation Plans is preceded by the assessment of their effects in the environment, under terms laid down by Portuguese law" [29].

Another weakness that collects a significant agreement (c. 26%) is that the MSP framework law encompasses both a **spatial planning and a licensing regime**. «*There is a major confusion between planning and licensing (…) although this is a law for marine planning in reality it seems to aim at ruling the licensing of economic activities*» (individual consulted in parliamentary hearings). «*A law for marine planning is not a law for economic exploitation, hence there is a conceptual mistake*» (different individual consulted in parliamentary hearings). «*I am very critical about the law (…) I do not understand what it aims for (…) because it mentions marine spatial planning as easily as it mentions private use titles*» (legal adviser, and external observer). To a number of informants, the MSP framework law is clearly too much focused on the licensing dimension, and for that reason the planning dimension is not properly, or strongly, developed. For example, the two type of marine planning instruments, Situation Plans and Allocation Plans, are insufficiently described as the law does not substantiate their legal nature in a detailed way. This, in turn, weakens those instruments by creating uncertainty and raising concerns regarding their future appropriateness and technical quality. «*Plans must be the basis for territorial planning (…) and the law's* Achilles heel *is the absence of real plans*» (member of 7-CAM). Concomitantly, some informants believe that this planning-licensing duality compromises the quality of the MSP framework law because the spatial planning system becomes "contaminated" by economic principles (which is itself a different weakness).

Sixth, the MSP framework law leaves a large number of **aspects to be solved in ensuing legislation**[194] (c. 24% of informants). Such complementary legislation will address a total of thirteen topics, and to some informants without this "specific regime", i.e. the regulations, the MSP framework law serves no purpose. An individual consulted in the parliamentary hearings further advocated that by leaving too many aspects to be solved subsequently the law «*will create legal uncertainty that will contaminate licensing instead of facilitating it*». For that reason, two members of the MT advocated that both the MSP framework law and its regulations should have been published at the same time. «*There was both the time and the capacity (…) the conditions to deliver everything at the same time*». «*It does not make sense for the government to present a framework law in January when they know it can only be implemented one, two or three years later (…) it would be better to wait a bit longer and make everything in a consistent*

[194] The MSP complementary legislation is analyzed in detail in Chapter 4.

way. Concomitantly, some believe that by leaving too many key aspects to be defined in the future, the Parliament is giving a "blank cheque" to the Government to further define MSP regulations. «*It is not democratic and it is not good*» (individual consulted in parliamentary hearings). «*I have never seen a piece of legislation with so many expected subsequent decrees (…) it feels like everything was left to be decided*» (government representative, and participant in POEM). Furthermore, even though the established period for the complementary legislation approval is not large, i.e. six months from the law's publication date, in the past there were cases where defined deadlines were largely exceeded[195]. Consequently, there is a real risk from having a long waiting period until the complementary legislation is approved and published. «*If what has happened in the past is to be repeated I am not sure that within six months there will be any decree to be approved (…) but I might be wrong*» (government representative, and participant in POEM).

Seventh the MSP framework law does not specify a **strategy for the future** of the Portuguese sea (c. 18% of informants). It does not establish what the intentions are, neither does it unravel which is the pathway to be followed. «*What do we want of our ocean? And of our coastal areas? What is the model to be followed? With which means? What are the objectives? This is not defined*» (individual consulted in parliamentary hearings). Concomitantly, the strategic vision, main goals and objectives for Portuguese MSP seem to be missing from the MSP framework law. «*A framework law must provide the basis (…) some details can be ruled subsequently, but the general guidelines need to be present (…) the general idea has to be there, and it is not*» (scientist, and external observer). To a different scientist, and external observer, this is especially relevant because «*marine planning is in fact a prospective activity (…) we are, today, planning for the future (…) thus we need to know how we want the future to be*». Concomitantly, as stated by a different individual consulted in the parliamentary hearings, a framework law mirrors what the State's vision is on a given subject, and for that all aspects must be clearly stated. «*We cannot rely on what is implicit*».

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[195] For example, when the Portuguese Water Law was published it was established that a set of complementary legislation had to be approved by the government within three months (after the law's entry into force) i.e. by the end of March 2006 [168]. Such complementary legislation, however, was only approved one year after the established deadline, i.e. in March 2007, entering into force only in June 2007 [169]. «*There was a long waiting period, and I hope it does not happen again (…) at that time we had to rely on goodwill for projects to continue, for people to have authorizations, there was a spoken agreement (…) because the waiting was longer than a year*» (member of MT).

Closely linked to the land-sea articulation issue, is an eight identified weakness: the MSP framework law enshrines a **completely new planning system** for the maritime space, instead of expanding the one existing in land to the marine realm[196] (c. 16% of informants). «*It is a disaster to develop a completely new system for the sea, regardless of the differences between marine and terrestrial realms (…) we wouldn't need the entire range of planning instruments that are included in the land planning, but the ocean planning system must at least have an equivalent in land, otherwise how will we solve things in the coastal zone?*» (NGO representative, and external observer). A senior legal advisor, and external observer, also showed her disbelief in what she considers to be a "wrong political option". In her opinion, there should be a unique spatial planning system for the entire Portuguese territory – and, consequently, a unique spatial planning law – including both the marine and terrestrial dimensions. Because at the time the MSP framework law was being developed the Portuguese Land Planning Framework Law[197] was also under revision, there was a unique opportunity to merge both systems. «*I tried to convince government members not to make the MSP framework law in these terms given that, by happy coincidence, the terrestrial regime was also being revised (…) this separation of regimes is truly inappropriate and clumsy (…) it was a very negative failure for the country (…) it is a bad moment*» (legal adviser, and external observer). «*Developing a different law for the sea does not make any sense (…) it is a disadvantage not to assume the entire national territory in a unique law, with both a terrestrial part and a maritime one*» (member of CT).

A ninth limitation, as identified by c. 16% of informants, is the maximum **duration for concessions**[198] as established in the MSP framework law. To some informants, a maximum duration of 75 years[199] is an excessively long period, and despite the fact that some investments need to have guarantees legal permits with such characteristics should not be

[196] This aspect is simultaneously identified as a strength in Section 5.4.4.

[197] In October 2013, a law proposal that aimed to revise and update former land laws entered the Portuguese Parliament, i.e. Law Proposal No. 183/XII. After being discussed in general, in late November the proposal was sent to a special Parliament commission to be discussed in detail. The final overall vote occurred in April 2014, and Law No. 31/2014, which establishes the general basis for the public policy of soils, territorial planning and urbanism, was published in May 30, 2014. More information at ref. [174].

[198] One of the three possible types of private use titles (see Chapter 4, Section 4.2).

[199] 75 years was the timeframe established in Law Proposal No. 133/XII, which was the document available at the time the interviewing process took place. After the parliamentary discussion, however, the maximum duration for concessions was reduced to 50 years (which is identified as a strength of the MSP framework law by one member of the 7-CAM – Table S5.7, SM).

granted to anyone. «*Fishing vessels, for example, surface longliners or trawlers (…) that cost 3 to 10 million euros have annual licenses – annual; to whom will we then give a concession for 75 years? We must draw this type of parallel (…) I am very reluctant*» (individual consulted in parliamentary hearings). «*A period of 75 years corresponds to more than three generations (…) it will bring us close to 2100 and who knows how the Portuguese sea will be by then*» (university professor, and external observer). Other informants' advocate that although concessions of 75 years unequivocally pose a threat, in some exceptional cases investments may require such a time frame, otherwise the Portuguese regime will not be sufficiently encouraging for the use of the sea. «*Concessions should be qualified according to the investment, if the investment justifies it (…) we have to provide legal safety to investors because business at sea have much higher risks, and much higher costs than business in land*» (individual consulted in parliamentary hearings). In the context of this heated debate, two informants however advocated that the Portuguese Water Law (which applies to marine waters up to the 1 nm limit) already encompassed concessions with such a time frame[200], and without any controversies. «*I do not understand why this aspect raised such debate (…) maybe due to a lack of knowledge (…) because this period is already established in the water law*» (law developer). «*The water law includes the same thing and no one bothered (…) and a maximum of 75 years does not preclude, for example, concessions for 11 years (…) what does not make sense is for us to define that aquacultures must have permits with a maximum of 10 years and the amortization period for the investment is of 25 years*» (government agency representative, and participant in POEM).

Tenth, the MSP framework law should have been developed in a truly **participative way** (c. 16% of informants). Regardless of the fact that the diploma was going to be further debated and discussed within the Parliament, a number of informants advocate that the writing of the law could have benefited from being developed in a participative process, from the very beginning. Instead the discussion process was carried at a later stage, which might not be able to solve all structural problems that the law enshrines. Alongside, contrarily to what happened in the POEM, there was a reduced institutional, and sectoral participation in the development of the MSP framework law. «*The law development was a particularly closed*

[200] The Water Law states that "the concession contract for the use of the Public Hydric Domain refers all rights and obligations of contracting parties and its period of validity, which does not exceed 75 years" [168]. Its subsequent legislation, which rules the use of water resources, states that "the concession period, which cannot exceed 75 years, is established according to the nature and dimension of the associated investment, as well as to its economic and environmental relevance" [169].

process (…) we do not know exactly which version is now being discussed (…) neither who is the entity responsible for the law's development» (government agency representative, and participant in POEM). Furthermore, more than one informant criticised that relevant entities, such as the Institute for Nature Conservation and Forests, or the OCEANO XXI – Association for the Knowledge and Economy of the Sea, were not called to participate in the process.

An eleventh weakness pertains to the **POEM not being explicitly referred** to in the MSP framework law (c. 16% of informants). The only place where the POEM was directly mentioned in the MSP framework law was the explanatory memorandum[201]. However, as it is common procedure in Portuguese legislative processes such introductory section was removed when the final version of the MSP framework law was promulgated. «*It was not a bias towards the POEM, it is always like that*» (member of 7-CAM). However, because the POEM, as a plan, does not have a legal context within the law, and new MSP instruments are not obliged to build on the POEM, there is a risk of spending time and resources in a work that is already developed and available. To a member of the CT it is not understandable how Situation Plans and Allocation plans are not obliged to use POEM's data. «*The law is so poorly conceptualized that (…) it is not even mandatory for it to use POEM's information (…) the spatialization* is *in the POEM (…) areas can be redefined as new concessions are granted, as new information arrives, that is what an adaptive plan does (…) why did we developed the POEM for then? Because it is done, the information is there. I do not understand why now two new instruments from a framework law need to reinvent the wheel*» (university professor, and participant in POEM); «*The law does not make good use of the pathway developed by the POEM (…) it does not overcome POEM's limitations and shortcomings, it simply does something else on the side, which is typical in Portugal*» (legal advisor, and external observer). ». But to a different participant in the POEM, it is not enough for Situation Plans to be based merely on POEM's spatialization. «*To use only the spatialization serves no purpose (…) it is not sufficient for Situation Plans to get POEM's spatial information (…) a plan is much more than that, it is a proposal, an idea*».

[201] A translation of the exact wording of this part of law proposal's explanatory memorandum is presented in Section 5.4.7.

The twelfth identified weakness, which raised a heated debate, was the **insufficient consideration of the Autonomous Regions** during the development of the MSP framework law (c. 16% of informants). A number of informants advocated that the law promotes an excessive centralization of competences into a single organism, i.e. the central government, to the detriment of others such as the regional governments of Madeira and the Azores. «*There is an excessively centralist dynamics (…) that has some difficulty to aggregate, mobilize, and integrate contributions from entities located in more peripheral positions*» (NGO representative, and external observer). To a legal adviser, and external observer, this is not in line with the principles of subsidiarity and of shared management, in which there must be «*more than a mere consultation*». The Autonomous Regions seem to have developed a "resistance" to some aspects of the law, especially in what is perceived to be a an attempt to dispute who is in charge for the maritime space. «*We have to establish the difference between autonomy and independence (…) autonomy is a positive factor (…) that allows a variety of interventions according to the national diversity (…) and I believe the law's centralism jeopardizes such autonomy*» (member of MT). According to the same informant, it would make more sense to establish broad, comprehensive guidelines at a high political level, and then to carry management and implementation actions at the local level, e.g. municipalities.

Thirteenth, the **terminology of the new marine planning instruments** established in the MSP framework law do not have a direct parallel in the terrestrial planning system, which is a weakness according to c. 13% of informants. «*The names are truly* byzantine *(…) terminology must be especially understandable by people (…) but no one will easily understand if their legal situation is defined by Situation Plans or by Allocation Plans, and then the law is also not clear on that matter*» (senior legal advisor, and external observer). «*For people who work in territorial planning, the new terminology is completely strange (…) as it stands the law is of high complexity to technicians, the people who will then need to develop plans*» (member of CT). The same applies to investors and to everyone who deals with maritime uses. As suggested by a different informant, one way to address this issue would be to establish equivalences, for example by saying that Allocation Plans were to be similar to a certain type of terrestrial plans.

Finally, the MSP framework law does not include the creation of a **financial "fund" to support both marine protection and scientific research**, which is a major loss of opportunity. About 13% of informants agree on this weakness, most of them being

participants in the law development. «*It is the user-pays principle (…) users will pay so that the State and the society can both promote knowledge and protect the marine environment (…) this is important because there are so many budget constraints that if we do not have a specific fund for marine protection and research nothing will happen (…) because if there is a situation where we have to choose between paying unemployment benefits or investing in scientific research, it is easy to anticipate what the result will be*» (member of 7-CAM). According to the same member of the 7-CAM the reason why the fund was not created was because the Government did not accept it. «*In reality people involved in the discussion all agreed, but the government did not accepted it (…) we were removing all proposals that were not consensual (…) and in the end this proposal gathered consensus except for the creation of the fund (…) so it was decided to present it and it was then rejected*». In fact, one amendment to the MSP framework law that was proposed by the PS regarded the creation of a "Marine Protection and Research Fund, intended for the conservation of the marine environment and promotion of maritime scientific research"[202]. Despite collecting positive votes from PS, PCP and BE, in the voting process such amendment was rejected due to negative votes from PSD and CDS-PP[203]. To a different member of Parliament there was a different reason: «*We had the ambition to go further, but it was not possible (…) the Portuguese Court of Auditors made remarks on the earmarking of revenue (…) and consequently the Ministry of Finance expressed reservations about allowing earmarking of revenue namely in what was related to scientific research (…) but I believe the law already indicates it, we already emphasized that there must be a corresponding financial envelope and that it must be a priority*». Some informants however believe that the development of a fund can be revised in the future. First, because although there are concerns regarding the earmarking of revenue, there are also good precedents for this situation, namely the development of the Portuguese Carbon Fund[204]. Second, because if a future political change occurs in favour of PS, non-consensual aspects of the MSP framework law can still be altered.

[202] See page 63 of Appendix II (Changes proposed by parliamentary groups) of ref. [143].

[203] See Appendix III (Guide of vote) of ref. [143].

[204] The Portuguese Carbon Fund was created by Decree-Law No. 71/2006, and is meant to support a transition towards a resilient, competitive and low-carbon economy by funding/co-funding measures that contribute to fulfil the Portuguese State commitments under the Kyoto Protocol.

5.4.6. From a sector plan to a framework law: POEM published as a study

As described in Section 5.3.1, after being developed for more than two and half years as a Sector Plan in the end the POEM was published as a study. According to interviewed key-actors of the Portuguese MSP process, this might have occurred for two major reasons:

- First, because the POEM had limitations that prevented it from being a proper MSP instrument;
- Second, due to political reasons.

Also, a number of informants were "unsure" about the exact reason why the POEM was published as a study. «*I do not know what originate it, what was the reason for the plan to create such antibodies*» (scientist and external observer). Here, while some informants did not advance any explanation (c. 5%), others provided a reason yet recognizing they were not entirely sure about it (c. 16%). A summary of the opinions expressed is presented in Table 5.9.

Regarding the first motive, it collected the agreement of c. 39% of informants, particularly among participants in both the POEM (c. 18%) and the MSP framework law (c. 13%), and it is similarly represented by all types of affiliations (c. 5-11%). From the entire set of identified weakness presented in Tables 5.6 and TS5.7, four were appointed by informants as potential reasons to explain the transition between the POEM and the MSP framework law:

- Being developed under a terrestrial planning framework;
- Being developed as a Sector Plan;
- Lacking the operational mechanisms (particularly, a legal framework);
- Being excessively broad and generic, with no planning solutions.

To some informants, because the POEM was designed within a **terrestrial planning framework** it would always be somewhat limitative to the use of the maritime space. It would never be able to "go beyond it". «*It made no sense to approve a plan under the previous regime, a plan that would never have all the potential we believe future plans may now have*» (law developer). «*There was a public criticism (…) that said awful things about the plan (…) that the selected legal framework was unwise and had been poorly selected (…) that a new legal regime for the sea had to be created, one entirely different from land*» (scientist and external observer). By contrast, the implementation of a new and specific marine planning framework, designed from scratch to

encompass the particularities of the marine realm (e.g. its tri-dimensionality[205]) would enclose a number of opportunities for ocean's use. And that was why the Government decided not to approve the POEM as a plan and, instead, developed a MSP framework law. As stated by a member of the CT «*within the new government structure for the sea it was considered best not to approve the POEM in those terms because it was built according to the structure of terrestrial planning instruments, and there would be a mismatch with the maritime space (…) there was an intention to develop an integrated approach for the entire marine component*».

Table 5.9. Main responses to Question 2f: Why was the POEM developed as a plan but published as a study? Seven informants (18.4%) did not respond. Because some informants have answered multiple reasons, percentages do not sum to 100%. NGO: Non-governmental organization.

	Political reasons	POEM´s limitations	Unsure
Total Count	**16**	**15**	**8** [a]
Total percentage	42.1 %	39.5 %	21.1 %
Count by Primary Role			
Participant in the POEM	10	7	4
Participant in the MSP law	2	5	1
External observer	4	3	3
Count by Sector			
Portuguese State	0	3	0
Government agency	6	4	2
Academia	7	4	3
NGO	3	2	3
Independent consultant	0	2	0

(a) While two informants simply stated they were not sure and did not advance any explanation, six informants provided an answer yet recognizing they were not entirely sure about it.

[205] These differences between marine and terrestrial realms are addressed in Section 5.4.4, when addressing the ninth strength of the MSP framework law.

Other informants identified the **Sector Plan** framework as the motive to support the decision not to approve the POEM as a plan. As stated by a member of the CT, at the end of the POEM process «*some lawyers who clearly worked with terrestrial planning legislation raised issues regarding POEM being published as a Sector Plan (…) this stopped the entire process (…) prior to that there had always been a consensus (…) there was even a public consultation process (…) and no one raised this aspect (…) there was an acceptance from the sectors (…) the POEM had management guidelines that had to be implemented through sectoral legislation or territorial legislation (…) just like with any other Sector Plan*». Concomitantly a university professor, and external observer, stated that «*one of the arguments used to prevent the POEM from being a plan was that it was not a Sector Plan (…) but in reality (…) it only had a horizontal nature instead of a vertical one, being a Sector Plan for the sea (…) but we are not used to that in Portugal*». Furthermore, as identified in Section 5.4.3, a Sector Plan is only mandatory for public entities and not to private parties, which makes it very ineffective when it comes to solving spatial planning problems. «*The progress towards this law is in part due to these limitations (…) people involved in the POEM knew that some things were still not as they should be (…) As a private interested party, does the POEM tell me what I can and cannot do in the maritime space? Unfortunately the answer is no (…) it was very ineffective*» (senior legal advisor, and external observer).

The third identified limitation to explain why the POEM was not approved as a plan is the lack of **operational mechanisms** for the implementation of MSP decisions. As stated by a member of the SEA team «*there is a major difficulty in Portugal to take action after a plan is developed (…) normally plans are developed (…) and then stay on a shelf (…) the POEM never had an execution plan. All plans must specify how they are to be implemented, and while the procedures are somewhat linear for other types of plans – such as PDMs that are implemented through urban development plans and then urban detail plan – for sectoral plans they are not. For that reason mechanisms must be established to transpose Sectoral Plans (…) for example POOCs could clearly implement the POEM (…) but that had to be identified and discussed (…) by responsible entities*». Concomitantly, as stated before (Section 5.4.3) the POEM does not include a legal framework for licensing the use of the maritime space. According to a law developer, for that reason, «*we needed to stop the POEM process in order to give it continuity, because there must be a legal framework, all the legislation that will materialize what the POEM is*». Concomitantly, a member of the MT advocated that «*the major reason for POEM not to have been approved was to add flexibility*

to the returning of Portugal to the sea, that is, if we start bureaucratising this return becomes much more complicated. If instead we simplify it (…) doors will open».

Finally, some informants believe that the reason for POEM not to be approved was that it did not constitute a **true plan**, being excessively vague and not enshrining the expected planning solutions. As stated by a member of the MT, the POEM process «*was deeply incapable of developing true spatial planning solutions (…) and failed completely (…) it was unable to make choices, decisions, to set priorities, to evaluate strategies*[206] *(…) and that is why it was never turned into a true management instrument and stayed as a study*». There was a step backwards, and POEM was presented as a study instead of as a plan, exactly because «*the POEM was not a marine spatial plan (…) this setback reflects the major weakness of the process (…) that no marine spatial plan was reached*» (NGO representative, and external observer).

However, although some of these limitations were identified during POEM's development[207] they did not prevent the plan from being developed until the very end. Concomitantly, only a few months before being published as a study, particularly in the final two MT meetings [136, 137], the POEM's implementation was still being discussed as well as other technical aspects that revealed a clear intention to approve it as a Sector Plan. In this context, a member of the MT raised a very pertinent question: «*How come no one, among all the public administration organisms that were involved in the POEM, saw this coming for two years? Suddenly new actors come into play and reach this* new *conclusion?*».

The answer to this question is linked to the second identified motive for the POEM to be published as a study: it was primarily due to political reasons. This second line of reasoning gathered a slightly larger agreement among informants (c. 42%), particularly among participants in the POEM (c. 26%) – see Table 5.9. In regards to affiliations, it has a significant support of government representatives (c. 16%) and academia members (c. 18%). Many informants are in fact convinced that the 2011 government change, from the government led by PS to the one led by PSD/CDS-PP[208], was the real main reason for POEM's "downgrading"

[206] Up to this point, this quote is also presented in Section 5.4.3 when addressing the third weakness of the POEM.

[207] For example, the absence of a legal framework for the use of the maritime space was discussed a number of times during MT meetings (as stated in Section 5.4.3 when referring to the second weakness of the POEM). Also, a member of the 7-CAM advocated that «*when the POEM was under public consultation there was a set of limitations that were identified*».

[208] See Section 5.3.1.

from a plan to a study (and for the subsequent development of a MSP framework law). Three types of political reasons related to the government change were appointed by informants:

- A political practice of "reinventing the wheel";
- A way not to compromise future MSP options;
- Institutional changes deriving from the government change.

First, in Portugal there seems to be a quite common practice of **starting things over** whenever there is a government change, that is, the new government tends to abandon all things that were developed by the government previously in office. «*I believe it was just the political change, together with that Portuguese practice that what is behind it is one thing and what is ahead will be quite another*» (member of the MT); «*There were a lot of participants and entities who changed (…) and when people change something is always lost (…) it seems that each new person that arrives has its own vision and simply ignores what was developed before and starts from scratch, as if reinventing the wheel over and over again*» (member of the SEA team). In this case, however, the government change was complemented by a change in political ideology. And this makes the "restarting" practice even more likely to occur. As advocated by a university professor, and external observer «*there is definitely a different agenda (…) the POEM was started under the political ideology of the government in office at that time, that is the PS, and it would not be a different political colour, namely PSD/CDS-PP's, to publish it (…) of course this is childish, and we can question where is the national interest reflected?*».

Second, because different political parties tend to follow different (and many times incompatible) policy goals and perspectives, POEM's downgrading might have been a way not to **compromise future MSP** policy options. Several informants clearly advocated that the new PSD/CDS-PP government had a different "vision" for the use of the maritime space, especially focused on its economic exploitation. «*This government (…) has a much more utilitarian view on everything and therefore will try to fully explore the ocean (…) a no-man's land that can be used and give revenues to the general society on the short term (…) if with a PS government the tendency is already to have some liberalization, with a PSD/CDS-PP government this tendency is complete*» (university researcher and external observer). Because the POEM was not very ambitious in this regard, especially when compared to the following MSP instruments, there was no interest in having it approved. In fact, in this context having the POEM approved as a plan could constitute a restriction because everything in place, presently or in the future, in

the Portuguese maritime space would then have to follow the plan's guidelines. By contrast, having the POEM approved as a study, that is, a guiding document with no legal or regulatory authority would allow for a larger flexibility on future MSP. This way, the POEM would not inhibit new intentions for the development of maritime activities, while still keeping a reasonable level of recognition. As stated by two different informants: «*the strength of a plan is different from the strength of a study, and in a time when economic development is an urgency at all costs (…) having a spatial plan can be much more inhibitory than having a study, a guiding document*» (university professor, and external observer); and «*I believe it was a way not to lose the work developed, but at the same time without compromising future options (…) it has to do with a political decision of the Secretary of State for the Sea*» (member of the MT).

Third, the process of developing the POEM was affected by the **institutional modifications** that derived from the government change[209]. As the process of developing the POEM was reaching an end and the government change occurred, the POEM coordinating entity, i.e. the INAG, was disbanded. Hence, and as stated by a member of the MT, before it was disbanded the «*INAG really wanted to deliver something to the Minister in charge, at that time the Minister for Agriculture, Sea, Environment and Spatial Planning (…) and so the POEM's process needed an ending*». At the same time, a different participant in the POEM advocated that the POEM stayed "on a shelf" because the INAG was extinguished at a crucial point of the process, when POEM's implementation was to be initialized. «*Responsible entities should have defined how to turn POEM's measures and guidelines into practice immediately after the development process was completed (…) the problem is that immediately after that, the INAG "died" (…) the POEM never identified its "exit strategy", which is essential to establish the next steps. On the day that the POEM was finalized, but before it was approved, which normally occurs only several months later, (…) the team should have immediately started to set things into motion*» (member of the SEA team). To a member of the CT this absence of an execution plan, or exit strategy, was because of the lack of "political strength" (deriving from the government change) to attract the investment needed for POEM's implementation. «*There was already a large political component, it was beyond the CIAM and the technical team, it was already in the public policy's sphere*». Accordingly, it was advocated that the DGPM, i.e. the "second" coordinating entity of the POEM, did not take full

[209] These are addressed in detail Section 5.3.1.

responsibility regarding its implementation. As stated by an individual consulted in the parliamentary hearings «*the good "paternity" of the POEM, which was present throughout its development and that had led everyone to participate (…) was lost after the plan was ready (…) since it was finalised no one understood how is was to be implemented (…) there were no reports, no information, no clue regarding evaluation mechanism (…) the DGPM itself did not fully assumed such paternity (…) or the responsibility to execute the plan*».

5.4.7. The link between the POEM and MSP legislation

Concomitantly to the analysis of why was the POEM published as a study (Section 5.4.6), it is important to understand what is the expected link between the POEM and the MSP framework law. Just like in the previous section, opinions diverge among interviewed key-actors of the Portuguese MSP process, as two major perceptions were expressed. First, the POEM is the basis upon which the MSP framework law will build, namely in what regards the development of Situation Plans. Second, the POEM and the MSP framework law will remain as two separate processes, with no connection. Also, a number of informants were "unsure" about how the POEM will be connected with subsequent MSP instruments, not advancing any explanation (c. 18%). A summary of the opinions expressed is presented in Table 5.10.

Regarding the first perception, it collected the agreement of about one third of informants (c. 32%), particularly among participants in both the POEM (c. 18%) and the MSP framework law (c. 11%). In regards to affiliations, it has a significant support of government representatives (c. 16%). Many informants are in fact convinced that the work developed in the POEM is the **basis upon which the MSP framework law will build**. As stated by a law developer «*the point where the POEM ends is the starting point for the new MSP framework law (…) updates will evidently be needed because the POEM was finalized for some time now (…) but because this updating phase is already expected it will not represent any difficulty*». To the same informant, not only can POEM's data be used (pending the necessary updates) but there is also the possibility to revisit POEM's management guidelines and measures. According to a member of the MT, this recognition was also referred at inter-ministerial meetings where the MSP framework law initial draft was being analysed and discussed. «*We would be in a very bad position if the POEM was not articulated with the law (…) properly updated the POEM must be the basis for any future work (…) at least at this stage it must be the baseline document (…) and on this everyone agrees, at least from what I heard in meetings with the Office of the Secretary of State for the Sea*». Concomitantly, in a public session about Portuguese MSP [171] the Secretary of State for the Sea himself clearly stated that the large amount of work developed in the ambit of the POEM was to be entirely taken into account when establishing the system that will support the development of the MSP framework law. He also acknowledged that the POEM encompassed a wide variety of matters, that it was very comprehensive, and that two of its fundamental elements were to be used in the MSP framework law – namely, what related to (i) existing

activities and (ii) the development of future activities in the national maritime space. Also, both a member of the MT and an individual consulted in parliamentary hearings further stated that not only is POEM's information likely to be used by the MSP framework law, but also by the MSP complementary legislation (which implements the former) because so far «*the POEM is the only public acquis of information about MSP*».

Table 5.10. Main responses to Question 3f: What will be the link between the POEM and the MSP framework law? Fourteen informants (36.8%) did not respond. NGO: Non-governmental organization.

	POEM as baseline for MSP framework law	No link between both	Unsure
Total Count	**12** [a]	**5**	**7**
Total percentage	31.6 %	13.2 %	18.4 %
Count by Primary Role			
Participant in the POEM	7	1	3
Participant in the MSP law	4	3	1
External observer	1	1	3
Count by Sector			
Portuguese State	3	0	1
Government agency	6	0	1
Academia	1	2	2
NGO	0	2	3
Independent consultant	2	1	0

(a) Five informants further advocated that the POEM is specifically to be the basis for Situation Plans.

Still regarding this first perception, some informants (c. 13%) went further and specified the role played by the **Situation Plan** in ensuring the POEM-law connection. Because the POEM encompasses a characterization of the existing situation, and because Situation Plans are the new MSP instruments that will establish the baseline situation (i.e. identify protection areas and the distribution of maritime present and future activities), Situation Plans will basically correspond to the POEM, pending the needed update of information. This was also acknowledged by some informants as a way to avoid the duplication of efforts. As stated by a member of the MT, the link between these instruments was not specified in the initial drafts of the MSP framework law, but in the final draft it became specifically mentioned. In fact, in the introduction to Law Proposal No. 133/XII it is stated that "the development of Situation Plans will be based on the elements developed by the multidisciplinary team, created to prepare the proposal for the *Plano de Ordenamento do Espaço Marítimo [POEM]*, that prove to be necessary and appropriate for an expeditious and rigorous identification of existing uses and activities in the entire Portuguese maritime space" [210] [36].

However, because this introductory section was removed from the approved final version of the proposed law[211] the MSP framework law itself has no direct reference to the POEM. This means that the law does not establish a "formal link" between both instruments. And, as stated by a NGO representative and external observer, in the absence of such a formal link no one can be sure of what will happen. This is the main reason why a number of informants remain sceptical and are convinced that the POEM and the MSP framework law **will in fact never be linked**. They believe that these are two different initiatives towards Portuguese MSP, carried out by two different State organisms (namely, INAG-DGPM and Office of the Secretary of State for the Sea) and following two different approaches, with different policy perspectives and goals. «*I do not anticipate any articulation between the POEM and the law (…) there is no way they will be linked*» (individual consulted in parliamentary hearings).

This second line of reasoning, however, gathers the agreement of only a small number of informants (c. 13%), being limited to members of the academia, NGOs representatives and

[210] Italics by the author.

[211] As stated in Section 5.4.5 when referring to the eleventh weakness of the MSP framework law, this is common procedure in Portuguese rule-making process. Upon approval of the final version of a law, the introductory section is commonly removed.

independent consultants (3-5% each). As advocated by a legal adviser, and external observer the MSP framework law «*does not make good use of the pathway developed by the POEM (…) it does not overcome POEM's limitations and shortcomings, it simply does something else on the side, which is typical in Portugal*[212] *(…) the POEM does not have any legal context within the MSP framework law (…) and it is not clear how the POEM, as a study, can feed Situation Plans and Allocation Plans*». Concomitantly, a NGO representative consulted in parliamentary hearings argued that the POEM did not contribute to the development of the MSP framework law, that it did not provide neither data nor expertise which could have been extremely useful for developing the law, and that this absence is evident in the final result. Moreover, because the POEM was never approved as a plan it could never be recognized in the MSP framework law as such. And because the POEM never had implementation actions it would be inappropriate to build the law over a "void".

[212] Up to this point, this quote is also presented in Section 5.4.5 when addressing the eleventh weakness of the MSP framework law.

5.4.8. Environmental concerns

A key question for the long-term adequacy of MSP, as stated in Chapter 2, is how it is actually addressing sustainability. *Is it relying on hard or soft sustainability concepts? Does it prioritize the achievement of GES or blue growth?* In what regards Portuguese MSP in particular, these two questions are already addressed in Chapter 3. In this section they are revisited, but this time from the perspective of interviewed key-actors of the Portuguese MSP process. The section is built around the following four major topics, each having a corresponding table where expressed opinions are summarized:

- Environment in MSP: *ecosystem-based MSP* versus *integrated-use MSP* (Table 5.11);
- EBM: *theoretical concept* versus *tool to ensure sustainability* (Table 5.12);
- Environment in the POEM (Table 5.13);
- Environment in the MSP framework law (Table 5.14).

In what regards the first topic, a somewhat reduced number of informants (c. 13%) is unsure on the **role to be played by the environment**. However the large majority of informants (c. 68%) believes that the **environment must be the basis for MSP**. This view is specially emphasised among participants in both the POEM and the MSP framework law (c. 26% each) and, regarding affiliations, it is particularly supported by members of the academia (c. 21%) and government representatives (c. 16%). Several informants (c. 21%) clearly recognized that the environment – i.e. marine resources (living and non-living) and the services they provide – has «*a fundamental role*», is «*a premise of*», or is «*the baseline for*» MSP. To a university professor consulted in parliamentary hearings, the first thing that all spatial plans must identify are the constraints, i.e. the things that will limit the distribution of human uses in space and time. And the first and major constraint must always be the distribution of living and non-living marine resources, which must be safeguarded. «*It is clear that the first concern in MSP, and the first criteria for the assessment of intentions regarding the use of the ocean, must always be the environment (…) especially because part of the value of the maritime space directly relates to its biodiversity*» (senior legal adviser, and external observer). For these reasons, and as advocated by a number of informants (c. 13%), the environment must never be treated as a sector in MSP processes. It must instead be treated in a horizontal, cross-cutting way. «*Treating the environment as a sector is not reasonable (…) a truly sustainable development strategy*

could never do it (…) it would always consider the environment as cross-cutting feature» (university professor consulted in parliamentary hearings). "Nature conservation" was similarly identified by some informants (c. 8%) as being the baseline for MSP within an EBM framework. Just like the environment, nature conservation is not to be treated as a use in parallel to other ocean uses, but as a baseline prerequisite, contributing to the support of all those other use sectors. But not everyone agrees on this. As stated by two members of the CT «*marine resources, and the services they provide must be the basis for MSP (…) nature conservation is different (…) we must choose our terminology carefully when we are addressing the importance of these issues (…) when we refer nature conservation we are only including areas with a recognized national or international protection status (…) it does not encompass everything (…) by contrast, marine resources are much more than that*» and «*there is one thing called nature conservation and other thing called the environment or biodiversity (…) conservation is a function of a given entity, while the environment, the resources (…) might require a privileged treatment*».

Concomitantly, it was acknowledged by a number of informants (c. 11%) that «*environmental sustainability is essential*» for MSP. They believe that environmental sustainability must be the overarching principle of marine spatial plans, the foundation upon which the entire process is to be built and, therefore, that it must never be compromised. In fact only by having healthy ecosystems can ocean uses be expect to sustain. A resilient environment is therefore the baseline for the development of a blue economy. «*Maintaining ecosystems in absolute terms is the premise for a maritime economy (…) the ecosystem is therefore the baseline for economic activities (…) and this is very clear, for example, in the European Integrated Maritime Policy*» (individual consulted in parliamentary hearings). As a result, informants argued that the exploitation of the ocean cannot take place at all costs. It can only go so far as to the point from which marine ecosystems can still recover, because beyond it, the basis will be destroyed. «*The marine environment is the biophysical basis for blue economy (…) unfortunately is has not been recognized as such (…) it would not shock me if some parts of the marine environment suffered some impacts. The key question is what is reasonable to accept on behalf of development?*» (NGO representative and external observer). The answer provided is that the sustainability of the resource cannot be compromised. As stated by an individual consulted in parliamentary hearings, there are no "shortcuts". People that are interested in economic development «*cannot believe they can make a shortcut and avoid environmental protection measures (…) because*

if they do it they will not be part of this new economy (…) the twenty-first century (…) follows a sustainability paradigm (…) and companies that do not follow such paradigm will not be successful». Accordingly, other informants stated that «*ocean use is only of interest if it is sustainable, otherwise we will kill the goose that lays the golden egg (…) to us that is very clear*» (member of the MT) and «*if we do not protect the marine environment, it is over (…) we will have killed the money tree*[213]» (member of 7-CAM).

Irrespective of their opinion about prioritizing the environment, some informants (c. 13%) strongly advocated that fundamentalist approaches should be avoided at all costs. There must be a rational exploitation of resources, a respect for marine ecosystems and an awareness on the limits needed to preserve the resources, «*but we should never consider nature as untouchable, particularly to the detriment of people*» (individual consulted in parliamentary hearings). As stated by a different NGO representative consulted in the parliamentary hearings «*I am very afraid of fundamentalist visions regarding nature conservation (…) some people can only see the worst in everything (…) and we all lose with it (…) we lose resources, we lose energy, and we lose ability*».

By contrast, some people believe that the **environment should be considered as any other "sector" of MSP** (Table 5.11). This view is however shared by only a small number of informants (c. 11%), equally distributed between participants in the POEM and external observers, and being limited to government representatives, members of the academia, and NGOs representatives (c. 3-5%). This second line of reasoning advocates that nature conservation and the marine environment should not be considered as a baseline component for MSP, but surely as a very important one. In fact a member of the MT argued that all use sectors should be similarly important. Environmental, economic and social aspects should be equally weighted as pillars of sustainable development, without ever prioritizing one over the others. «*We cannot assume that the environment, namely biodiversity and geodiversity, has a higher value than the rest*».

A different member of the MT further stated that this continuous balance between ocean uses and nature conservation, i.e. the socioeconomic and the environmental components, must nevertheless never jeopardize environmental sustainability. «*It is important to know and identify the "red" line (…) the point of no return (…) and to recognize that it is dynamic*».

[213] This quote is also used in Section 5.4.4 when addressing the MSP framework law's fourth strength.

Concomitantly a NGO representative, and external observer, emphasized the importance of having proper baseline knowledge, not only regarding the distribution of marine resources, but also regarding the positive and negative impacts that derive from each maritime activity. «*Baseline information on biodiversity is vital to sustainability (…) we have to have knowledge in order to protect, otherwise we may end up closing the wrong areas*». Finally, the absence of a fundamentalist view on nature conservation was also referred by the same informant. «*It is important not to have a fundamentalist view (…) with an excess of protection (…) but also without damaging the environment by having no criteria, because this will have a bad result on the long term (…) balance is needed*».

Table 5.11. Main responses to Question 4a: What is the importance of the environment for MSP? Three informants (7.9%) did not respond. NGO: Non-governmental organization.

	Environment as the foundation	Environment as a sector	Unsure
Total Count	**26** [a]	**4**	**5**
Total percentage	68.4 %	10.5 %	13.2 %
Count by Primary Role			
Participant in the POEM	10	2	4
Participant in the MSP law	10	0	0
External observer	6	2	1
Count by Sector			
Portuguese State	4	0	0
Government agency	6	1	2
Academia	8	2	3
NGO	5	1	0
Independent consultant	3	0	0

(a) Seven of the informants who advocated that the environment should be the basis for MSP, clearly stated that a fundamentalist view of nature conservation had to be avoided at all costs.

In what regards the second topic, one third of informants did not respond. For those who did, some are unsure on the ability to **put EBM into practice**, therefore not advocating clearly in favour of or against it (c. 16%) – see Table 5.12. The relative majority of informants (c. 29%), however, believes that EBM is **merely a theoretical concept**. This view is shared by informants with all types of roles and, regarding affiliations, it is particularly supported by members of the academia (c. 16%) and NGO representatives (c. 8%). EBM is perceived as a "nice theory", but something that is non-existent in operational terms. As referred by both a scientist external to the process and a law developer, no one knows how to put EBM into practice as there is no specific model (or models) to be followed yet. Questions such as «*what does it mean?*» and «*how can we do it?*» are thus fairly common. An additional difficulty is that everyone seems to have a different definition for EBM[214]. By being a broad concept, EBM is differently perceived by people according to their backgrounds and views – for example, EBM will mean something different for a biologist or an engineer. In effect to a member of the MT the EBM concept could not be vaguer. «*It is everything and it is nothing (…) the ecosystem approach is whatever we want to do with it*».

According to a member of the CT this problem can only be solved through experimentation. «*We need to take chances and experimenting (…) learn from others' experience and trying to apply it to our own cases (…) try several approaches (…) and scientific humbleness is essential in order to recognize that one approach does not work and try another (…) we have to be able to assume our limitations (…) that we still do not know how to apply the EBM principle (…) otherwise EBM will remain as a theoretical principle that fits nicely in reports and papers, but never as a real thing*». While some informants agree that there are pathways to be followed, and that for example the valuation of ecosystem services could provide quantitative tools for EBM implementation (scientist, and external observer), or that the EU could further ensure such implementation by establishing that MSP had to begin with an identification of constraints, like MPAs and Natura 2000 sites (individual consulted in parliamentary hearings), others are simply convinced that EBM will never be implemented. Concomitantly, a number of informants believe that there is a current trend to use EBM as a slogan, a catchphrase, and sometimes even as a way to perform

[214] The definition of EBM is addressed in Chapter 2, Section 2.2.

greenwashing[215]. «*To many people EBM is simply greenwashing, a way to elude and to say that there is an intention to protect the ecosystem, when in fact such intention is totally absent*» (member of the MT). «*Unfortunately (…) EBM is used as a slogan, no one knows exactly what we are talking about (…) it is like sustainable development, the idea of not compromising the future, they are slogans (…) which fit nicely in policies and political speeches*» (scientist, and external observer). As with other theoretical concepts that change from time to time, being more or less ephemeral in an almost "fashionable" way, EBM is often included in speeches but without having any impact in practical terms. And here some informants established a clear parallel to the sustainable development concept. «*EBM is just like sustainable development, they have golden objectives, but there is no single path, recipe or solution to get there, we are all trying to do it*» (member of the CT). Nevertheless, even if EBM remains "merely" as a concept, it still is of high importance. It provides a comprehensive and integrated view of ocean management, going «*beyond the species-by-species, habitat-by-habitat, or use-by-use analysis*» (senior scientist, and external observer). It is therefore a good starting point, and one of extreme relevance for the future.

By contrast, a number of informants (c. 26%) believes that EBM is definitely a **tool to ensure environmental sustainability**. This view is especially shared among participants in the POEM (c. 18%), and in regards to affiliations, particularly supported by government representatives and members of the academia (c. 11% each). It has been argued that EBM is a practical way to develop sustainable MSP by ensuring the right balance between protection and use. And that as a result it must be more and more implemented. «*It is the only way towards sustainable development, it is very useful (…) it is a concept with tangible consequences, such as decision-making processes and policy-making*» (individual consulted in parliamentary hearings). «*It is a practical way, a way to put things into practice (…) it is all about integrating things (…) we have to think about the different components (…) the economy because without financial resources we will not be able to protect anything (…) the protection of marine resources because they are also important for the economy (…) the importance that all of this has to the people (…) hence this integrative approach is the basis for everything (…) EBM is a way to put sustainable development into practice*» (member of the CT). One important feature of EBM is that it considers humans as being part of the ecosystem, and puts ecosystems in the centre of the development policies. This is especially

[215] *Greenwashing* is a deceptive marketing strategy, used to promote the perception that something is environmentally friendly or environmentally sustainable when in fact it is not.

important because only by understanding how ecosystems function can people ensure their sustainable use.

Some informants further identified ways to ensure that the EBM concept is truly applied. Here, GES, environmental assessments, and valuation of ecosystem services were all pointed out as instruments that contribute to the implementation of EBM. «*EBM is the way nature conservation should have positioned itself long ago (…) ecosystem services are the golden key to ensure such connection between the environment and economy*» (member of the SEA team). Nevertheless, among advocates of this "positive" vision, it was still pointed out that because there is a lot of discussion regarding the EBM definition, some difficulties in its implementation might be expected. In some cases people do not fully understand the concept, and they still do not know "how" to apply it. For that reason there is still a high level of "experimentation" regarding EBM. Furthermore an individual consulted in parliamentary hearings stated that although it has the potential to be a tool for sustainability, EBM is currently not being fully implemented and, in times, it is even used as «*a way to perform blue-washing*[216]».

[216] In a parallel to *greenwashing* (see previous Footnote) but applied to the ocean.

Table 5.12. Main responses to Question 4b: What is your opinion on the ecosystem-based approach? Eleven informants (28.9%) did not respond. NGO: Non-governmental organization.

	Theoretical concept	Tool to ensure sustainability	Unsure
Total Count	**11**	**10**	**6**
Total percentage	28.9 %	26.3 %	15.8 %
Count by Primary Role			
Participant in the POEM	4	7	4
Participant in the MSP law	2	2	1
External observer	5	1	1
Count by Sector			
Portuguese State	1	1	0
Government agency	1	4	3
Academia	6	4	2
NGO	3	0	1
Independent consultant	0	1	0

In what regards how the **POEM encompasses environmental concerns**, a somewhat reduced number of informants (c. 11%) is unsure (Table 5.13). A similar number (c. 13%), however, agreed that the **environment is properly considered** in the POEM. This later view is specially emphasized among participants in the POEM (c. 11%) and, regarding affiliations, it is similarly supported by member of the State, government representatives and members of the academia (c. 3-8%). It was advocated that both EBM and environmental sustainability concepts were truly taken into account in the POEM. Moreover, to a member of the MT, nature conservation was considered as «*the baseline for everything*». Other informants argued that the POEM has many layers of information that are linked to the environment, and that it even identified potential, future areas for nature conservation. There were some "tough fights" to ensure that the environment was properly considered, but the final result was in accordance with the priorities established. According to a member of the MT, the POEM is therefore a

«*good example of sustainable MSP (…) and it was even coordinated by an entity that belonged to the Ministry for the Environment*[217]».

By contrast, the relative majority of informants (c. 37%) believes that the **environment is poorly considered in the POEM**. This view is more or less similarly shared among participants with all types of roles (8-16%), and especially among members of the academia (c. 21%). The fact that the POEM treats the environment as a sector, instead of as a cross-cutting issue to the planning process, was already identified as being one of its major weaknesses[218]. In this section such criticism is again emphasized. It was advocated that this "sector" approach derived from POEM's lack of biodiversity data, otherwise marine resources would have been treated as a separate "layer" of information. Even separately from nature conservation, which should only pertain to protected areas. «*There is a deep gap on biodiversity data, and such data is therefore not properly integrated into the process , in order to ensure sustainable development and to allow for MSP to really be built around the ecosystems and nature conservation pillar*» (member of MT). «*In the POEM, resources were treated as a sector essentially because there was a gap on the information provided by the scientific community (…) without such gap of information marine resources would have been treated as a separate layer, together with fisheries, nature conservation, etc.*» (member of CT). In effect, the POEM does not provide for a spatial and temporal distribution of Portuguese marine ecosystem services and goods.

Moreover, nature conservation in the POEM seems to be limited to the identification of existing MPAs. And these were not even identified at the proper stage of the process, that is, at its beginning and as the first constraint to limit the distribution of ocean uses in order to ensure sustainable MSP. Also, while the possibility of creating new MPAs is referred in the POEM, new MPAs were never materialized in its spatialization. This is why a scientist, and external observer stated that «*looking at the POEM we see that what is written in the text does not correspond to what is materialized in the plan (…) regarding nature conservation the POEM is limited to the identification of pre-existent protected areas and to the identification of areas with potential for protection*». Concomitantly, individuals consulted in the parliamentary hearings stated that «*these are nice words, and they are all there, but only at the theoretical level*» and «*the need to*

[217] INAG, the entity responsible for coordination the POEM, was under the Ministry for the Environment.

[218] See Section 5.4.3.

safeguard the environment is identified but no means were created to solve the problems, there is only a description».

As also stated before, while identifying POEM's weaknesses, some informants believe that the plan has a predominantly economic-based approach. Therefore, expressions such as «*it is more focused in solving use-use conflicts*», «*it is excessively focused on exploitation*», or «*the environment is secondary*», are very common among informants. To others there was simply a reduced will to consider the environment in a cross-cutting way because it would make the planning process much more complex. Regardless of the reasons, all these informants seem to agree that environmental issues are not sufficiently addressed in the POEM and that, as a result, the environment is not appropriately safeguarded. The POEM is therefore «*not a good example of sustainable MSP*». To two informants however it still was the best possible attempt at that time.

Table 5.13. Main responses to Question 4c: How is environmental sustainability considered in the POEM? Fifteen informants (39.5%) did not respond. NGO: Non-governmental organization.

	Properly	Poorly	Unsure
Total Count	**5**	**14**	**4**
Total percentage	13.2 %	36.8 %	10.5 %
Count by Primary Role			
Participant in the POEM	4	6	2
Participant in the MSP law	1	3	1
External observer	0	5	1
Count by Sector			
Portuguese State	1	0	1
Government agency	3	2	2
Academia	1	8	0
NGO	0	3	1
Independent consultant	0	1	0

Finally, in what regards how the **MSP framework law encompasses environmental concerns**, a reduced number of informants is unsure (c. 8%; see Table 5.14). A somewhat larger number, however, agreed that the **environment is properly considered** in the MSP framework law (c. 16%). This view is shared by participants in both the POEM and the MSP framework law (c. 5-11%), and is limited to members of State and government representatives (c. 5-11%). The fact that the law properly safeguards the environment was already identified as being one of its major strengths[219], and it is again highlighted here. A set of State representatives believes that the environment is a "premise" for using the ocean because maritime activities are obliged to comply with MSFD requirements, namely in regards to achieving or maintaining GES in the marine environment. Concomitantly, the MSP framework law is believed to be totally articulated with environmental concerns exactly because the need to ensure GES is clearly mentioned within it. At key points of the law, such as its principles and objectives, it is stated that both the environment and GES are fundamental. It is also further stated that ocean uses will only take place if at all times users ensure the necessary measure to safeguard GES. According to a law developer there is, in fact, no need to state this over and over again, because it would only "densify" the law[220].

At the same time, contrary to informants who strongly advocate that the environment should be the first and foremost preference criteria for establishing prevailing uses in case of conflict, here the dominant opinion is that by treating the environment as a criterion – even if the most relevant one – would minimize its importance. On the contrary, such economic criteria are only applicable if the environment is safeguarded, i.e. only if the use of the maritime space is favourable to the environment. Furthermore, the law promotes the development of comprehensive environmental assessments in the ocean because the granting of use title must be preceded by such evaluations. For all these reasons, all these informants believe that the environment is totally safeguarded in the MSP framework law.

Contrary to the previous view, the large majority of informants believes that the **environment is poorly considered** in the MSP framework law (c. 45%). This opinion is similarly shared by participants with all types of roles (c. 11-18%) and, regarding affiliations, it

[219] See Section 5.4.4.

[220] A quote with this idea is presented in Section 5.4.4 when addressing the fourth strength of the MSP framework law.

is particularly supported by members of the academia (c. 21%) and NGO representatives (c. 13%). The fact that the environment is not properly safeguarded in the MSP framework law was already identified as being one of its major weaknesses[221], and it is once more highlighted in here. Several informants believe that environmental concerns are not properly addressed and specified in the law, and that they require a much higher level of detail. «*Together with the spatial planning system (…) environmental aspects are (…) what requires a higher level of further work (…) maybe because they were not as easy to agree on as the ocean uses part*» (member of MT). «*The main idea is that licensing is essential so that economic activities may be developed, but that is not enough , a framework law must include much more than that, namely the environmental component has to be much more developed*» (scientist, and external observer).

Concomitantly, the environment is considered to be "secondary" when set against economic concerns, because the main goal of the MSP framework law is to exploit and use the ocean. The environment is also believed to be addressed as a "sector", and a "diffuse constraint", and environmental references are extremely scarce within the law. To some informants there are no concerns with environmental sustainability whatsoever, either following a hard sustainability or a soft sustainability view[222]. «*Environmental sustainability is not encompassed at all (…) it is only words, there is not a single environmental objective*» (scientist, and external observer). Also, the law does not specify at any point that marine ecosystem services and goods are essential for Portugal, neither that environmental sustainability must be ensured. Finally, as stated by a senior scientist, and external observer, "safety valves" are not specified for whenever the environment is compromised. «*There must be a safety valve for the system, that is (…) something that says that if there is a damaging occurrence for the environment (…) the use stops and will be reconsidered*». And these must be linked to environmental assessments and monitoring, which is a familiar language to policy-makers, decision-makers and investors. For example, questions such as "are the mitigation measures taken being effective?" and "is the environmental component evolving as it was expected to?" need to be answered and evaluated.

[221] See Section 5.4.5.

[222] See definitions of *hard sustainability* and *soft sustainability* in Chapter 2, Section 2.3.

Table 5.14. Main responses to Question 4d: How is environmental sustainability considered in the MSP framework law? Twelve informants (31.6%) did not respond. NGO: Non-governmental organization.

	Poorly	Properly	Unsure
Total Count	**17**	**6**	**3**
Total percentage	44.7 %	15.8 %	7.9 %
Count by Primary Role			
Participant in the POEM	4	2	2
Participant in the MSP law	6	4	0
External observer	7	0	1
Count by Sector			
Portuguese State	0	4	0
Government agency	2	2	1
Academia	8	0	2
NGO	5	0	0
Independent consultant	2	0	0

5.4.9. Challenges for the future

According to the interviewed key-actors of the Portuguese MSP process, Portuguese MSP will face a myriad of future challenges. Because a large number of different views were expressed, similarly to what occurred in other sections only the opinions that were shared at least by three informants are addressed in this section and presented in Table 5.15[223].

The identified challenge that gathered the largest agreement among informants (c. 58%) regards the Portuguese **governance system**. First, there is a large number of national entities with overlapping competences on marine and coastal areas, which leads to what was designated as both «*an institutional confusion*» (scientist, and external observer) or «*a system of extreme complexity*» (member of CT). To a different member of the CT, this happens because Portugal has a governance model that is built upon a myriad of overlapping spatial planning instruments. «*The myriad of existing spatial planning instruments is daunting (…) there is a high number of overlaps, and they have completely different concepts over the same matter (…) it is a major confusion*» (individual consulted in parliamentary hearings). Because sharing competences among government agencies is difficult and creates conflicts, a number of informants believe that the governance system must be clarified. «*We must define who is in charge, where, over what and how (…) only then can we think about a simplification of procedures*» (member of CT). «*Portugal needs a tool to clarify the different intervention levels that are possible in its territory*» (member of MT). To others, besides such clarification, the administration also needs to be simplified. Either a single entity or a decision-making body composed by a number of entities should be established to work as a facilitator for the use of the ocean. «*We need to find (…) a mechanism (…) that plays the facilitator role to allow a true intervention on the maritime space (…) but one that does not act as a chief or that makes decisions alone*» (member of MT). «*We should have one single administration for the ocean*». «*The administration needs to be simplified*» (member of MT). In line with this reasoning, a member of the 7-CAM stated that it was very important that the "ocean" would become politically independent in terms of governance, management and competences. «*The sea is not autonomous (…) nowadays the "sea" only deals with things that do not fit other sectors (…) granting such autonomy to maritime affairs is a major political challenge (…) the coordination role, the leadership role should be played by the sea (…) an articulation*

[223] A list of additional future challenges can be found in Table S5.9, SM.

with the remaining sectors, such as energy (…) must obviously be ensured (…) but the coordination role should be played by the sea». Moreover, Portugal requires strong leadership and capable people in the government to work on these issues. And this is also challenging because «*Portugal has a very fragile political tissue (…) there is no leadership (…) there is a lack of structure, of communication, of competences*» (member of SEA team) and because «*there is a lot of good people, but also very bad professionals (…) in the government*» (individual consulted in parliamentary hearings). Concomitantly, Portuguese administration continues to have a sectoral view on ocean matters rather than a holistic, integrated one. Each institution only deals with one planning instrument and does not pay proper attention the remaining ones based on the principle the only important thing is «*what concerns me*» (member of CT). But that must change. «*We need to change our paradigm and be serious about it*» (member of the CT). This is in fact closely connected to having the administration functioning in an uncoordinated way. And many consider this lack of coordination among entities as a very serious problem, and a major challenge. «*The administration works at a "backyard" level (…) that is, no one likes to have other people interfering with their own backyards, and no one cares about what happens at others backyards*» (legal adviser, and external observer). «*People are not interested in collaborating because of both public and private interests (…) this is my "backyard", that one is yours (…) forget the national interest*» (NGO representative, and external observer). To some informants the answer relies on communication, on learning to discuss, on improving the understanding regarding other entities. But developing a culture of collaboration instead of competition inside the public administration will be extremely challenging. «*We need to seat at the same table and communicate, but Portugal does not have such tradition (…) it is a tribal culture, based on the "backyard" paradigm (…) not a culture for society (…) and it will take long to change that*» (scientist, and external observer). «*Fifty thousand decrees would not solve this (…) even with good plans, without communication and without taking responsibility for such plans Portugal we will never have a conceptual and an operational framework that allow for an integrated approach*» (NGO representative, and external observer). Furthermore it is key that responsible entities learn to build on the work already developed by others, which frequently does not occur. «*We need a change of both attitude and working methods (…) we need to plan, make decision on the long term, not every four years because the government changes, and act accordingly*» (member of CT). Overall, as stated by an individual consulted in parliamentary hearings Portugal needs a social,

economic and environmental "re-engineering" in order to properly manage the ocean. «*We need an effective governance system for the sea (…) one which is inclusive, integrative and participative (…) we need a larger communication and participation to reach a consensus (…) we need operational instruments that endure in time and do not change with governments (…) we need to recognize that the ocean is complex and start managing it as such*».

The second challenge to collect a higher agreement among informants (c. 42%) is the real **development of a maritime economy**. This starts with the challenge of having ocean uses really in place. In fact, some activities will not be as easy to develop at sea as expected, and some may even not be developed at all. According to a member of the MT, off-shore aquaculture in the south coast of Portugal, and off-shore wind energy in the west coast, for example, are already under development and should be further promoted. On the contrary, exploitation of oil and gas may, or may not, be developed. Other informants however are not convinced at all. «*I do not believe that in ten years we will have renewables being really develop along the Portuguese coast, no (…) technology is not yet there*» (scientist, and external observer). «*It would be important to understand when these renewable energies would be ready (…) if they will ever be ready (…) when will technologies allow it*» (member of CT). This relates to the fact that the Portuguese sea is "difficult". First, it has average depths of 3000 m, instead of 30-40 m such as the North Sea, which implies higher technological costs. Second, the west coast is extremely "rough", being highly exposed to strong winds and waves especially in the winter, therefore damaging infrastructures with ease – e.g. the case of Pelamis Wave Energy Converters at Aguçadoura Wave Farm[224]. At the same time, ocean uses require a significant amount of investment. According to an individual consulted in the parliamentary hearings, if European Structural Funds for 2014-2020 consider the sea as a strategic asset, the Portuguese State could foster private investment basing on such funds. But that is not all. Portugal must also develop conditions to provide legal certainty to ocean users, in order to allow companies to invest. «*Investors are needed in order to have ocean uses*» (member of MT) and «*people who want to invest, above all need to know where they stand, the good and the bad (…) they need to know which are the rules to be followed*» (NGO representative, and external observer). This is closely

[224] The Aguçadoura Wave Farm, located 3 nm off the Portuguese coast, was officially opened in September 2008 to test three first-generation Pelamis converters, which used the motion of ocean surface waves to produce electricity. The wave farm was shut down two months later, in November 2008. At that time the Pelamis machines were brought to harbor due to technical problems.

related to having a system in place to allow for the use of the ocean, namely an instrument that facilitates the management of the maritime space. To an individual consulted in the parliamentary hearings, even with all its shortcomings the MSP framework law does exactly that. «*It is a law that truly allows the use of the sea (…) currently people must wait around two, three years to get their licenses*». «*The ocean must become a real opportunity for development, for sustainable development (…) the majority of the population should be able to perceive it as an answer to their problems*» (member of MT). According to a different informant, if Portugal does not actually develop a maritime economy in the next few years, it might be losing a key opportunity. Concomitantly, without ocean uses there is no need for MSP. «*The Portuguese sea has a major economic potential and either we take this real opportunity or we will lose it*» (member of CT). «*In 2020 Portugal may have a maritime economy, and a real need for MSP (…) otherwise the importance of the ocean might be lost for another generation*» (individual consulted in parliamentary hearings). «*We must have ocean uses otherwise MSP is not justified (…) we need to take advantage of our maritime potential (…) stop talking and start doing it*» (member of CT). «*If we do not make a real bet in the use of our ocean, we might not be needing MSP*» (member of 7-CAM). Moreover if ocean use is not effective, and maritime activities are not in place, the national exploitation of resources might be jeopardized. As stated by a NGO representative, and external observer «*if we do not start using our ocean (…) someday other countries (…) such as China or the United States (…) will start coming, as it happened before with fisheries (…) when someone realizes that the Portuguese sea is interesting, UNCLOS will not be enough (…) they will simply come and occupy the space (…) Portugal is always aiming for the best, but ends up doing nothing*». «*Portugal has an enormous potential at sea, and it is doing nothing (…) we are experts in creating opportunities to be developed by others*» (member of SEA team).

Table 5.15. Main responses to Question 5a: What will be the future major challenges for Portuguese MSP? Some informants have answered multiple reasons, thus percentages do not sum to 100%. NGO: Non-governmental organization.

	Governance system	Development of maritime economy	Knowledge on marine resources/uses	Public participation	Ocean literacy	Simplification of procedures	Implementation of MSP	Environmental protection	Link to coastal zone	Acceptance of MSP	Management of conflicts	Environmental assessment	Revision and adaptation	Financial capacity to support MSP	Enforcement	Complementary legislation	Integration of fisheries sector
Total Count	**22**	**16**	**9**	**8**	**8**	**7**	**7**	**7**	**7**	**6**	**6**	**5**	**5**	**4**	**4**	**4**	**3**
Total percentage	57.9 %	42.1 %	23.7 %	21.1 %	21.1 %	18.4 %	18.4 %	18.4 %	18.4 %	15.8 %	15.8 %	13.2 %	13.2 %	10.5 %	10.5 %	10.5 %	7.9 %
Count by Primary Role																	
Participant in the POEM	11	9	5	4	2	4	3	3	4	3	2	1	2	2	0	2	2
Participant in the MSP law	6	3	2	1	3	2	2	1	3	0	0	2	1	1	2	2	1
External observer	5	4	2	3	3	1	2	3	0	3	4	2	2	1	2	0	0
Count by Sector																	
Portuguese State	1	1	0	0	1	2	0	0	1	0	0	1	0	0	0	1	0
Government agency	7	4	3	3	1	3	3	1	2	3	2	0	0	1	0	2	1
Academia	7	6	3	3	3	1	0	5	1	2	3	2	3	3	1	0	1
NGO	5	2	2	1	3	1	3	0	1	1	1	1	1	0	2	1	1
Independent consultant	2	3	1	1	0	0	1	1	2	0	0	1	1	0	1	0	0

The third most referred challenge (c. 24% of informants) is the **gathering of knowledge** on ocean resources and uses. Portugal must invest in gathering knowledge on its marine ecosystems and the services they provide. Such information is currently lacking considerably, which poses major challenges for MSP. As a result, it must be perceived as a priority. «*We need to map the distribution of marine species and habitats throughout the country's maritime space (…) it is a priority*» (member of MT). «*We need to know in order to protect, and there is much that we do not know about our maritime space*» (member of MT). «*And it is a never over (…) it is a never ending story, a constant identification*» (member of MT). This improved knowledge is recognized as important not only to allow the protection of resources but also to stimulate the exploitation of the ocean. However gathering data is especially difficult in vast marine areas with large depths. This is the case for Portugal, especially beyond the 12 nm, where as stated by a member of the MT «*getting information on pelagic ecosystems and especially on deep sea ecosystems is not easy*». Concomitantly, Portugal needs to improve spatial information on ocean uses, particularly regarding fisheries that in the POEM corresponded to the entire EEZ (see above). Furthermore, although a challenging task, it is essential that a mechanism is established in order to ensure that all the scientific knowledge gathered in both national doctoral thesis and national research projects is transferred to Portuguese entities in charge for MSP. It was clearly advocated that the scientific community must not view scientific data in a "possessive" way. Scientific data must be made available for national purposes especially when research activities are funded by national resources, even if it does not become entirely available to the general public. «*It is imperative that the scientific community share their data*» (individual consulted in parliamentary hearings).

Fourth is the challenge of having a proper **public participation** (c. 21% of informants). As stated previously[225] some informants believe that Portuguese citizens are not used to actively participate in public consultation processes. According to two different members of the CT, Portugal still has «*a long way to go*» regarding public participation and the involvement of citizens in decision making processes. «*People must develop a participatory mentality*» (member of SEA team). «*People do not participate unless it affects them at a personal level (…) if it affects their backyard*» (legal adviser, and external observer). «*We tend to look solely to our backyard, to our*

[225] See Section 5.4.3, when addressing the ninth strength of the POEM.

problems» (member of CT). Concomitantly, public consultation processes in Portugal are not considered to be truly participative. First, they are not developed *ab initio. Second,* they are limited to a reduced period of time. «*Usually things only come out when they are already cooked (…) until then they are kept in secret*» (member of SEA team). Portugal needs therefore to develop a down-top approach. It is also critical that the scientific community is properly involved in MSP processes, because as seen for the POEM case, only then can the availability of key scientific data be ensured. To a member of the MT, this scientific participation must however be established beforehand, otherwise it will not be effective. «*England is a great example (…) their MSP system is fantastic (…) there are scientific teams from all scientific areas (…) they have a high level of information and capacity installed (…) one that Portugal (…) is not expected to have in the next twenty years*» (member of MT). Moreover, some stakeholder groups, such as fishing communities, are not properly organized and informed in order to properly analyse and debate MSP solutions. Therefore, participation is also key to allow for the dissemination of knowledge.

A fifth identified challenge relates to the development of **ocean literacy** (c. 21% of informants). Many believe that Portugal needs a very strong education process in order to raise awareness on the ocean. In fact, different informants advocated that Portugal must instil and develop «*a maritime culture*». Specialized training is needed for all areas of knowledge, from law to biology, and at all levels, from high-schools to universities. And this is also valid for politicians. As stated by a member of the 7-CAM «*Portugal is an orphan when it comes to ocean policy (…) because no one lives at the ocean (…) even regarding consultancy in the parliament, or available literature, there is not much on the ocean (…) there is insufficient technical information*». A NGO representative, and external observer, further advocated that this literacy is fundamental to develop the Portuguese maritime potential. However it is currently absent for the majority of the population, and only small groups of citizens have a knowledge on the ocean, and commonly by experience (e.g. fisherman). An individual consulted in the parliamentary hearings also advocated that instead of having restrictive laws, the priority should be to educate and train ocean users. «*We must educate people so that they develop a sense of belonging (…) this moves them to participate, to develop emotions (…) to feel things as their own (…) my beach, my planet (…) and children further have the ability to mobilize people from the two generations above, that is, parents and grandparents*» (scientist, and external observer).

A sixth identified future challenge is the **simplification of procedures** for the licensing of maritime space (c. 18% of informants). There is a high number of entities with competences over the Portuguese maritime space, which must deliver official opinions during licensing processes. As a result, the investor has to wait a long time. To overcome this problem having a one-stop-shop for the licensing of maritime space would be essential. A system where end-users would only contact with the public administration once. A system extremely well defined, where the established rules "merely" need to be followed. «*A system that is clear, procedural, not bureaucratic, that allows all entities with responsibility, which are many, to be involved without becoming an impediment for licensing*» (law developer). «*The information enters the system, is analysed, and then a final answer is provided to the applicant (…) if it is not good enough the answer is no (…) the applicant may then change the application and submit it once more, but as a new process (…) until this system is implemented nothing is going to properly work* » (member of CT). According to the same member of the CT this does not imply a transfer of authority from any entity, because their official opinions already have a legal framework. It is only a way to ensure an organized procedure. Nevertheless informants believe this will be challenging because it implies making changes in the way the system works.

Seventh, a number of informants (c. 18%) believe that actually **implementing MSP** will be a major challenge. Some informants are convinced that MSP will not be implemented at all. «*We will not reach the MSP implementation phase (…) we will simply adapt what is already in place (…) we will continue having a casuistic management (…) the only thing that is envisioned is the licensing (…) no, we will not have MSP*» (individual consulted in parliamentary hearings). To the same informant, it is very likely that a new MSP framework law starts being developed when a government change occurs, and one with very different characteristics. «*Governments also change (…) and I believe that the next one will make a new law completely different from this one*». There is, therefore, a risk of not materializing MSP, not having a solution or a consensus on something. In effect so far there is still not any mechanism to provide a photograph, a "snapshot" of the current situation of the Portuguese maritime space, although the POEM is recognized as a valid attempt to do so. «*It will be very hard to keep talking about the ocean as a national goal (…) without accompanying such political speech (…) with a set of measures (…) there has been a lot of talking but not much action regarding setting up the conditions for valuing the ocean (…) and here MSP is essential*» (NGO representative, and external observer). To this NGO

representative, it is fundamental that both Situation Plans and Allocation Plans are truly developed to ensure that this political focus on the ocean can be in fact operationalized. And such plans will need to further establish rules, set up thresholds, and safeguard the use and the valuation of resources. However, to some informants having these plans "in place" will be an immense challenge. As stated by a member of the MT «*the MSP framework law may say wonderful things (…) may be developed with the good will of the Secretary of State, the Ministers, and all politicians (…) but a framework law on its own is not enough*». The mechanisms to implement MSP are needed.

Another identified challenge for the future regards **environmental protection** (c. 18% of informants). A balance must be found between safeguarding marine resources and using them, which will be extremely challenging. «*There must be a pacification between safeguarding natural resources, which is one of our major assets for both economic and social development, and the enormous temptation to develop a maritime economy at all costs (…) we are already dealing with a highly damaged ocean (…) and either we keep exploring until there is nothing left with increasing technological capacity and efficiency (…) or we address the elephant in the room, that is (…) how will we recover marine ecosystems so that their productivity can be increased up to the "normal" level (…) the one that would be achieved without a continuous pressure and degradation*» (individual consulted in parliamentary hearings). A truly sustainable vision for ocean's use is therefore needed. And this requires both political will and management capacity in order not to give in to sectoral pressures, lobbying, or economic "temptations". «*We must ensure that we do not harm the goose that lays the golden egg*» (member of MT). «*The main challenge is (…) how can MSP be developed to contribute to the restoration and protection of natural resources which will allow economic activities (…) to be developed in the future with a much higher profitability (…) this implies a recognition that we will benefit much more from such restoration than from a continuing degradation (…) for that reason, these instruments can either be a central opportunity to solve these problems or a way to aggravate them*» (individual consulted in parliamentary hearings). In this context, there must a real internalization of biodiversity aspects as a cross-cutting issue, and not as «*the sector of the boring ones*» (member of MT). It must be shown that biodiversity supports ecosystems that in turn provide key services for human populations. And here the valuation of ecosystem services plays a paramount role. «*The economic valuation of ecosystems is gaining more and more importance (…) it is a language that politicians, decision-makers and economic agents*

understand (…) a common language (…) we can therefore start having a holistic and economic view on (…) the value of protecting ecosystems (…) because when the information comes from biologists it is often poorly received, but when it comes from economists doors open» (scientist, and external observer). «*Ecosystem services are the golden key to ensure a connection between the environment and economy*» (member of SEA team). Economic valuation of biodiversity must, in fact, be included in MSP processes because as long as the environment is perceived as something external, as long as it is left outside the "equation", it will be merely treated as a "limiting factor". Furthermore, in Portugal the environment is broadly perceived as very exasperating sector. «*The problem with the environment is again a matter of [administrative] "backyards" (…) both the environment and biodiversity were under the responsibility of institutions that do not always show a reasonable view over things (…) and so there is due care to ensure that these people do not come bugging at critical moments (…) sometimes there is a fear of having too much environment (…) and how is this solved? Keeping environment to a minimum*» (legal adviser, external to the process). «*There is a problem with the Portuguese perspective on nature conservation (…) it loses credibility because of fundamentalist views regarding the non-use of resources*» (member of SEA team). To a scientist, and external observer, Portugal never developed a proper discussion on «*which is the conservation we need (…) it is a patchwork with very little functional significance*».

A number of informants (c. 18%) believe that ensuring the **link between MSP and coastal zone planning** is an important future challenge. To an individual consulted in the parliamentary hearings, this link between land and sea is in fact "the" next challenge. Here, the baseline question is to define "how" such link is to be established. A member of the 7-CAM stated that «*one difficulty is to know the extent to which PDMs can be adapted to MSP, and even the EU MSP Directive is not clear on that topic*». Concomitantly, other informants believe that POOCs will have a preponderant role in this context. As stated by a member of the CT, POOCs will be further included in PDMs[226]. But this is only valid for the terrestrial part. In effect «*beach areas are already beyond PDMs, they are Public Maritime Domain[227] which is under a different management*

[226] According to article 78 of the Land Planning Framework Law, the contents of special spatial plans – such as POOCs – are to be further included in PDMs (or other territorial plans) within a maximum period of three years. In what regards the link to marine spatial plans, the law only states that their articulation and compatibility must be ensured (see Footnote 186).

[227] The Public Maritime Domain includes the margins of coastal waters, and of inland waters that are subject to tidal influence, which are defined as a zone of 50 m width measured from the maximum spring high water tide mark towards inland.

regime (…) and POOCs go up to the thirty meters bathymetry, which corresponds to the area were most activities take place (…) so POOCs will have to be articulated both with land, at the municipality level (…) and with the maritime space up to this bathymetry (…) but "how to" is not yet defined (…) it is left open». Many people further expect these unsolved issues to be addressed and established in the MSP complementary legislation. Concomitantly, a deeper, more detailed look is needed for this interface area. «*Coastal areas, that is (…) the interface zone needs a particular look, especially as it requires a different working scale (…) a much more detailed one*» (member of the CT). «*I believe that developing a larger scale GIS system for ocean uses (…) is fundamental (…) when we are dealing with macroscale activities it is not a problem (…) but as we start getting closer to land, when we are considering activities that take place closer to the coast, such as aquaculture, diving, surfing (…) we must have a larger scale (…) and we must have a computer tool that allows for the plan management (…) it is essential*» (member of MT). At the same time, it is recognized that this harmonization between land and sea needs to be ensured because «*everything that is done at sea, starts in land*» (individual consulted in parliamentary hearings).

A tenth identified future challenge, and one that is believed to be determinant for the success of MSP implementation, is being able to ensure **consensus building** (c. 16%). It is fundamental that MSP is developed in a consensual way, otherwise «*it will not go far*» (member of CT). Both the general public and stakeholders need to feel they are part of the process, and truly understand why some decisions are made. «*People must develop a sense of ownership, a sense of belonging (…) which will make them act (…) to participate (…) public's acceptance may be the major challenge, but it will depend on what is implemented*» (scientist, and external observer). Here, access to information is recognized as essential. There must be awareness campaigns, so that stakeholders can be aligned with MSP. «*People need to see results (…) there were a lot of problems in the Arrábida Marine Park (…) but if you talk to fisherman today they say there is more fish than before (…) it is a learning process (…) it requires communication (…) in that case, things were done and only afterwards did stakeholders saw the advantages (…) it is important that such acknowledgement happens before*» (member of CT). A different member of the CT argued that local stakeholders, such as city councils must be deeply linked to MSP, so that local communities can truly accept MSP. Moreover, to ensure a true acceptance it is very important that the established MSP is actually followed. «*Everyone must assume that this is the baseline instrument (…) and it must be understood, shared, and followed by everyone*» (member of CT). Finally, the acceptance of MSP

will tend to be less important as one goes further from the coast, where the potential for use-use and use-environment conflicts is higher, and into the open ocean, which is out of sight and thus out of mind.

Eleventh, a number of informants (c. 16%) believe that the **management of conflicts** is a major challenge. Different informants recognized that managing conflicts will be one of the biggest challenges for MSP, but only if ocean uses indeed take place. «*Only then will we see if the theoretical tangle is helpful or not*» (member of MT). Here, it is key that rules are clearly established in order to allow for a proper future management of the maritime space. In effect, as advocated by a scientist and external observer, it is extremely important to anticipate conflicts and solve them *a priori*. And as stated by a different one, this is especially relevant for "small" activities such as fisheries, tourism, and aquaculture, because in regards to bigger projects, such as mining «*they know exactly what they want to do*». This later aspect is in fact highlighted as a future problem: how to ensure an equitable and credible MSP system? Different (and conflicting) interests, from entities with differing socioeconomic importance, for example a local fishing community versus an international deep-sea mining company, or a major offshore wind-farm project, may not be handled in the same way. As a result, «*there will be imbalances (…) and an absence of equity*» (scientist, and external observer). As an example of such imbalances, a different scientist and external observer advocated that the WindFloat project[228] was installed before its environment assessment was finished. Concomitantly, it was argued that city councils may play a very important role when it comes to minimizing conflicts, and that workshops could be developed to establish rules for prevailing uses thus reducing conflicts. A NGO representative, and external observer, advocated that a possible solution, and one that was proposed to the administration during POEM's development, would rely on the creation of «*a team of academia members from different universities and areas (…) at least engineers, biologists, sociologist and economists, that together would develop an analysis program to assess (…) the benefits and costs of all ocean uses (…) and then in case of conflicts politicians could make decisions (…) based on a study properly supported (…) I believe we would all trust that university people could do such type of analysis (…) more unbiased than stakeholders, which are always trying to help themselves*».

[228] WindFloat is a floating foundation for offshore wind turbines. In October 2011, a WindFloat prototype was deployed 3 nm off the coast of Aguçadoura, Portugal.

To some informants (c. 13%) ensuring that **environmental assessments** do take place and are developed with both quality and seriousness is a major challenge. To date, environmental assessments are the best legal way to ensure that the environment is properly considered and protected. But, as stated by a NGO representative and external observer, this will «*largely depend on the seriousness of the process (…) it is a cultural issue but one to be solved over time*». The Portuguese State must in fact join efforts to ensure that such assessments are developed with fairness and objectivity, because if they solely depend on private parties there is a real risk of having biased studies. According to a member of the MT «*it is essential to ensure the independence of teams that develop environmental assessments (…) studies must not be biased (…) for example private parties could pay the government and then it would be the government who would hire people to develop such assessments (…) also I do believe that environmental assessments could be more stringent*». And, to the same informant, this is especially challenging when tenderers are strong multinational companies, as it is generally the case for energy and mining developments. «*I do have some concerns (…) but I am afraid that, so far, there is no other way (…) it might not be the best mechanism, but at least it is one that we do have*». Concomitantly, an individual consulted in the parliamentary hearings argued that the State could develop a "pre-licensing scheme", where the assessment of environmental impacts could be developed in a serious and rigorous way.

Thirteenth, the capacity to **revise and adapt marine plans and laws** is perceived as being considerably challenging (c. 13% of informants). According to a member of the CT, planning processes must be revised over and over again because the surrounding reality is always changing. «*Spatial planning is based on a continuous learning approach (…) that is why plans are intended for a ten years period (…) because the territory, the surrounding conditions, the demography, they all change*». It is therefore very important to ensure that marine spatial plans and regulations are not hermetic, that they can be adapted over time. As advocated by an individual consulted in parliamentary hearings, this is especially relevant as MSP is an activity for the future. While referring specifically to the MSP framework law, this informant stated that «*this is a law for the future (…) a place in time where we are not yet, and for that reason the law will need to be changed (…) in five years we will see things from a different perspective (…) at the present moment we do not have the experience (…) and we cannot really copy the experience from the North Sea (…) thus we are following a path somewhat blindly, and in this context (…) there will be many*

things to be rectified». To ensure this adaptation process, it is fundamental to have mechanisms and criteria for monitoring. And here, the scientific community could play a very important role. In fact, planning instruments could largely benefit from having independent «*monitoring scientific committees and working groups*» that would provide advice and guidance throughout the development of the MSP process (scientist, and external observer).

Fourteenth, gathering the **financial capacity to support MSP** is another expected challenge (c. 11% of informants). In the next ten years, Portugal will need to recover its financial capacity in order to be able to make investments that are essential to properly develop MSP processes. And there are no certainties regarding «*how European structural funds will be used*» (member of MT). For example, an initial investment is normally needed in order to collect and compile baseline information regarding marine biophysical resources. But that is not currently possible because of the absence of financial resources. Concomitantly, financial resources are also needed to implement MSP. According to a scientist and external observer, Portugal normally has good plans on paper, but these are then never implemented. And the same goes for monitoring processes, which are commonly absent. Furthermore, it is essential to establish the source for the financial support to develop MSP policies, particularly the financial instruments to do it. And according to some informants this is not established in the MSP framework law[229].

Fifteenth, the **enforcement of MSP** is also perceived as a challenge by c. 11% of informants. In fact Portugal needs a serious enforcement system in order to ensure that MSP decisions, and the subsequent rights of ocean users are fulfilled. As stated by an individual consulted in the parliamentary hearings, Portugal needs «*an ASAE[230] for the sea (…) and the national maritime police is an ASAE for the sea under training (…) there is a major evolution within the national maritime police since the early 2000s (…) they are qualified to play an enforcement role of paramount relevance regarding ocean uses*». Concomitantly to a NGO representative, and external observer, having a marine spatial plan will clearly facilitate enforcement activities, because there will be "communication channels" already established. However, it was also pointed out that if enforcement activities are already difficult in land, in the ocean they will be much harder.

[229] This is identified in Table S5.8 (SM) as an additional weaknesses of the MSP framework law.

[230] This is a reference to the Portuguese Authority for Economic and Food Safety (ASAE), which is the national entity responsible for assessing risks to food safety and audits.

A number of informants (c. 11%) believe that another future challenge pertains to the **MSP complementary legislation**. This is particularly related to the fact that the MSP framework law leaves a larger number of key aspects to be solved in this specific set of legislation[231]. For that reason some informants expressed their concern on a twofold approach. First because of its technical quality. A member of the 7-CAM stated that «*if the complementary legislation is week, parliamentary groups are prepared to ask for a parliamentary consideration*». Second, because of the time it might take until such legislation is approved and published. There is a risk from not having the complementary legislation approved and published for a long time. However, an individual consulted in parliamentary hearings further expressed a positive expectation that the complementary legislation could address aspects that were not so properly solved in the MSP framework law.

Finally, some informants (c. 8%) believe that properly **integrating the fisheries sector in MSP** is as much essential as it is a challenge. These informants believe that if fisheries are not properly integrated, MSP will never be a balanced process. Concomitantly, it is acknowledged that fisheries cannot be treated similarly to other ocean uses, because fisherman have historical rights on the ocean. And this is especially relevant when fisheries are set against potential ocean uses that are not yet in place and might actually never be developed. «*In fact fisherman have some historical rights and we cannot, or must not, trample them just because we want to develop a maritime economy*» (member of MT). According to the same informant, one way to ensure such historical rights is to certify that spatial information on fisheries is plainly available in MSP processes. «*One of the things that would be extremely important was (…) the improvement of spatial information on fisheries (…) and this can be considerably improved in the Portuguese case (…) in the first maps of the POEM the fisheries area corresponded to the entire EEZ (…) for trawl fishing (…) it is easier to establish the main fishing grounds, particularly because they use vessel monitoring systems (…) but for small-scale fishing this is still under development, and would be essential*». Furthermore, another challenging aspect is that fisherman have to develop a "critical mass", they have to learn to organize themselves in order to properly participate in MSP processes.

[231] See Section 5.4.5, when referring to the seventh weakness of the MSP framework law.

5.5. Discussion and conclusions

As stated in the methodology section, because the interviews took place between 2013 and 2014 but the final data analysis only occurred between 2015 and 2016, the discussion of this Chapter's large section of results benefits from a very particular perspective. In fact, we are *going back to the past* to revisit and unravel intricacies, strengths, weaknesses, and challenges of the Portuguese MSP process. But we are doing it in light of current knowledge, that is, already *knowing how some things turned out*, or having better clues on how they will be further developed in the future. In this context, the two main events *from the future* are (i) the publication of the final version of the MSP framework law, which was not yet available when the majority of interviews took place[232], and (ii) the publication of the MSP complementary legislation, i.e. the Decree-Law No. 38/2015 [30] that regulates the MSP framework law – henceforth, also referred to as "Diploma".

Origin of Portuguese MSP

Regarding the origin of Portuguese MSP, there seems to have been a clear *external* influence, i.e. European and international, deriving from the large number of documents that aroused in the 2000s about MSP. But concomitantly Portugal seems to have played an important role in "turning" Europe to the ocean, which works as a feedback loop. In fact the Portuguese contribution for the beginning of the EU Green Paper, which later led to the EU IMP that in turn recognizes MSP as a fundamental tool, is unequivocal. At the same time, the increased awareness on the need for mechanisms to organize, and allow for, the use of the ocean, especially because of pilot projects for renewable energies, also seems very likely to have fostered an urge for MSP. Furthermore, it was stated by an informant that the Portuguese 17th Constitutional Government, led by Prime Minister José Sócrates, put a clear emphasis in renewable energy. And there was a large potential to develop renewables in the ocean. But overall the origin of MSP in Portugal *had to* derive from a national political decision, a national initiative, based in a combination of these reasons. And it *had to*, because in fact at that time there were not any

[232] While thirty-five interviews took place before April 10, 2014 – when the MSP framework law was published – the remaining five interviews occurred between April 11 and June 19, 2014.

obligations to be fulfilled on this matter – such as the ones that now derive from the EU MSP Directive – as none of the international and European guidelines were *mandatory*.

POEM's strengths

In regards to the POEM, it is clear from the analysis of results that it has a number of both strengths and weaknesses. While some of these limitations will remain as future challenges for Portuguese MSP, others however were mitigated, at least to some extent, in either the MSP framework law or the subsequent Diploma (see Box 5.1 on *positive evolution within Portuguese MSP*). Nevertheless, the POEM does have a number of **strengths**, which should be considered when developing the new Situation Plan[233]. They must be perceived as lessons learned, to be further applied in the "new generation" of marine spatial plans. The Situation Plan cannot be technically considered a *second generation* marine spatial plan because although the POEM definitely embodied the first approach towards Portuguese MSP, it was not a *first plan*. However, from a *conceptual* point of view it can be perceived as such. Here, in light of a true adaptive approach, the knowledge gathered within POEM's development should hence be used to prevent, or overcome challenges in the development of the Situation Plan. Amongst its benefits, a key one relates to the dynamics that were developed among the people who developed the plan. The fact that everyone in the MT truly participated in the plan's development promoted a *link* to the POEM, a sense of ownership, and this is in turn of paramount relevance for the acceptance and implementation of planning and management processes. The increased communication and the network of people that remained after POEM's ending are also important assets, and here TPEA was a clear example of the benefits from having expertise in MSP. Also, there was a considerable effort to disseminate the POEM, although many people did not notice it. For example, an informant argued that the POEM had failed by not carrying dissemination activities at its very beginning, but in reality these took place. There were actually five dissemination panels and four thematic workshops between the second and the third MT meetings (Figure 5.4). But this can also be somewhat explained by the novelty of the subject, people still did not understand the relevance of MSP, thus paying less attention.

[233] Although the MSP framework law always refers to Situation *Plans*, the Diploma only mentions *one* Situation Plan. According to a legal adviser this is not entirely correct, because the framework law prevails over the Diploma, but one can argue that this decision is based on a *qualitative* criterion, rather than a quantitative one. From this point forward, and according to the most recent legislation, we will always refer to *the* Situation Plan.

Box 5.1. Positive *evolution* within Portuguese MSP

When analysing interviews' results it is possible to note that some of the limitations that were identified for the POEM were, to some extent, overcame in the MSP framework law process or in its subsequent regulations. And this can be perceived as an indicator of a positive evolution. Yet, it is still left to be analysed if solving these issues was intentional, and the direct result from a learning process, or if it happened due to other reasons, such as different political goals and visions.

• While the POEM was ***very long and dense***, there was a clear attempt to develop a coherent, simple and concise MSP framework law. This is important as a number of informants believe that POEM's reduced readability impaired its acceptance and dissemination levels. Others however pointed out the risks from having an overly simple document, where key matters such as nature conservation or the articulation with land could be under-addressed.

• The POEM did ***not encompass any operational mechanism*** to allow ocean use (e.g. a licensing scheme) while the MSP framework makes a clear effort to establish rules for ocean use, together with the basis for an ocean planning system. This is of importance because it will further allow the implementation of planning decisions (which did not happen with POEM) and also foster a maritime economy.

• Although the intention to ***simplify procedures*** for licensing was initially identified in the POEM, it came into a halt with the 2011 government change. This was revisited in the MSP framework law, being one of its objectives. A member of the CT advocated that this new legal framework benefited from previous discussions in the ambit of the POEM (Table S5.7, SM).

• While two members of the CT argued that information from the POEM was not ***available to the general public*** (Table S5.6, SM) the MSP framework law establishes that baseline data on national marine planning and management that are produced by public entities or made available in the ambit of legal requirements, must in general be made available to the public (article 29).

• The inclusion of the entire maritime space is another aspect overcome between the POEM and the new Situation Plan. The POEM ended up not including the ***Azores and Madeira EEZs*** while the Situation Plan will encompass the entire Portuguese space – it was publicly recognized by DGRM that the Situation Plan is being developed by "phases", but as a whole.

• Although the lack of participation from the ***scientific community*** was a critical issue in the POEM, with strong consequences, the MSP framework law establishes the need to ensure the participation of the scientific community in the development, amendment, revision and suspension of MSP instruments (article 12).

• While in the POEM it was not mandatory to provide a ***formal feedback*** regarding the public consultation process because obligations on such dissemination were not established in Ruling No. 24108/2010, the MSP framework law clearly ensures the previous publication of projects for MSP instruments, as well as of all proposals and opinions received in the scope of the public consultation process (article 12).

POEM's weaknesses

By contrast, one of the major weaknesses of the POEM is its ending. The fact that it was started as a plan but then published as a study, a soft-law, undermined both the process and its responsible entities, i.e. the administration. And this happened regardless of the limitations that might indeed have justified such "downgrading". It happened first and foremost because people were expecting one result and then, without any sign, they got a completely different one. As a result people might then feel they were losing their time, which in turn will not

contribute to a proper participation "next time". Some people argued that because the MT was essentially composed by public administration technicians, who were participating in the POEM just because they *had to*, this feeling of disappointment is not significant. However, to everyone who believes that such technicians really committed to their tasks of developing the POEM, did their utmost, and developed the previously referred "sense of ownership", this is a very sensitive point. And the same applies to other participants in the POEM, such as members of the CT, who argued spending several nights working hard on harmonizing information and putting everything together, or members of the SEA team. Another major lesson to be learned from the POEM pertains to the importance of ensuring the participation of the scientific community in the MSP process. In the POEM such participation was not properly ensured, either because scientists did not fully understand the relevance of the plan, or because entities in charge for the POEM were not able to properly establish a link, a communication channel, with the scientific community beforehand[234]. This largely undermined the process, particularly because information on the spatial distribution of marine goods and services was consequently not provided. This absence of a comprehensive mapping on marine resources in which to build MSP decisions further led the environment to be inappropriately integrated in the POEM, being treated as merely *another* use sector.

POEM's ending

In what concerns the appointed reasons to explain why the POEM was *published as a study*, the Sector Plan framework did have the limitation of being legally binding only to public entities and not to private parties. However, as pointed out by one informant, such aspect *should have* been addressed early in the process, and not after developing the plan for three years. It was advocated that the selection of an inappropriate legal framework was due to the lack of legal expertise within the MT and the CT. But this does not seem very plausible as there were people involved in the process with expertise in spatial planning, and therefore they ought to *know* that the Sector Plan framework was not applicable to private parties. They might however have still believed it to be the best option among the possible ones. In regards

[234] This was however difficult because the POEM was initially intended to be developed in c. six months. In fact, Ruling No. 32277/2008, which was published in December 2008, stated that the POEM should be developed by the end of the first semester of 2009.

to being developed under a terrestrial planning framework, this seems more of a theoretical limitation that a practical one. As stated by some informants, such terrestrial framework would not allow for the proper use of the ocean because it did not consider many of the specificities of the marine environment, such as its tri-dimensionality or the fact that there is no private property in the ocean. However, in upcoming instruments that followed the POEM, namely the MSP framework law, none of these marine "specificities" is comprehensively addressed or integrated. Some doubts therefore remain regarding the real differences that will be found in this context between the POEM, built in light of terrestrial planning, and the new Situation Plan, built under a specific maritime framework – with the exception of aspects such as being mandatory for both public and private parties, or including mechanisms for the automatic integration of new uses (as it is now possible with Allocation Plans). Finally, a relevant appointed reason to explain why the POEM could not be a plan was the lack of operational mechanisms for the use of the maritime space. However, such "framework for action" could have been developed immediately following POEM's development and within POEM's scope. In fact, that was to some extent what happened with the MSP framework law, whose development started immediately after the POEM. The major difference however is that it was decided to develop the law in the framework of a different, new process. This seems to be clearly related to a political decision. A decision that used POEM's recognised limitations to substantiate the need for a different process. In fact, a key question that might be asked is *would the same have happened, had the Portuguese 18th Constitutional Government remained in office in 2011?* That is, *would the POEM have been left behind because of its identified limitations?* It seems likely that the POEM would always need to undergo amendments and adaptation (for example, just like POOCs will now have to be adapted in light of the new Land Planning Framework Law, by changing from *plans* to *programs*). But in this context it is very hard to believe that the entire process would have come to a standstill, while a completely new one was started from scratch.

MSP framework law's strengths

In what pertains to the MSP framework law, just as for the POEM there are a number of positive and negative points that are important to retain for the future of Portuguese MSP. A clear strength is the parliamentary discussion to which the law was subjected. People in charge for this discussion seemed to make a real effort to consult with a large number, and variety of individuals – the 7-CAM Working Group consulted people from NGOs, with a more fundamentalist view on nature conservation, as well as businessmen, and a myriad of natural and social scientists and consultants – and to incorporate their suggestions into the law. As a result, the law underwent a considerable amount of improvements, and consequently many people *made their peace* with it. Another undeniable positive aspect of the law is that it establish *rules*. Even if one does not agree with such rules, ocean planning and use are now subject to a framework that is recognized and is legally binding for everyone, both private and public parties. It also has the strength of aiming to foster, to catalyse, the development of a Portuguese blue economy, which is of the utmost importance particularly in light of the current socioeconomic context, where new socioeconomic opportunities have to be pursued and created. But here a key aspect is that environmental sustainability is never to be compromised. In this context the law enshrines a number of positive aspects, like the emphasis it puts in *achieving* and *maintaining* GES, or the good set of principles that national MSP must follow, such as the ecosystem approach, adaptive management, integrated management, sustainable development or the polluter-pays principle[235]. In fact, the only "odd" principle pertains to the "valuation and promotion of economic activities". But this is actually included in the SCO report, where it is argued that sustainable development and economic development must not be seen as antonyms, and that the principle of valuation of economic activities can be "assumed as the demand for the promotion of conditions for the development of economic activities related to the ocean in a way that maximizes them in a long-term perspective"[236] [93]. The law also sets down *in black and white* that regarding conflicting uses, preference criteria is only applied if GES is ensured. So GES clearly works as a *pre-criterion*. However, the law could also state in black and

[235] The last two principles are not directly included in the MSP framework law but are part of the Environment Framework Law principles that must also be followed by national MSP (for the entire list of principles see Footnotes 59 and 60, in Chapter 4).

[236] See the 2nd Part, 2nd Strategic Objective of the SCO report.

white that the environment is a priority, the basis for economic development, and that for that reason is cannot be "harmed" beyond a There must be a balance, the so called "right mix" of protection and use. Because only by achieving such balance can we actually aim for sustainable development. Also, a positive point is that the law establishes that the approval of Allocation Plans must be preceded by their environmental assessment. However, regarding the Situation Plan no reference is made in the MSP framework law, and only in the Diploma is it established that it is subject to SEA[237] (see Box 5.3 on *aspects solved in the MSP Diploma*). Although there is not any proper explanation for this, according to one informant it could be related to the fact that the Situation Plan was to be built on the POEM, and the latter had already been subjected to SEA. But a curious detail regarding the SEA of the POEM is that in a sense it could be considered as not being "closed" because the plan was actually never approved. The MSP framework law also gathered a high level of political consensus, which is absolutely key in order to have a real chance to endure overtime, and not being "left behind" at the first political turn. This is in fact of especial relevance because there are cases where these political events do determine the way processes unfold – take for example the case of POEM's ending. Curiously, the Diploma seems to take a step back on this *consensus* topic. Although responsible entities recognized that the Diploma would largely benefit from also being broadly discussed in the parliament[238], it was approved without being first subjected to such discussion. Upon such approval, in March 2015 members of the PS parliamentary group formally requested a parliamentary consideration of the Diploma, which however expired seven months later, i.e. in October 2015 [96]. Yet because, also in October 2015, legislative elections took place and following these a new government led by the PS took office[239], there is a large possibility that the Diploma's discussion will be further revisited.

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[237] However, as discussed in Chapter 4, Section 4.5, with some possible exceptions.

[238] See Chapter 4, Section 4.5.

[239] This is the Portuguese 21st Constitutional Government, which took office in late November 2015. It is led by Prime Minister António Costa and builds on a parliamentary agreement among the PS, BE, PCP, PEV [132]. The previous government, i.e. the 20th Constitutional Government, was the shortest constitutional government of Portugal, being in place for less than a month. It was formed based on the results from the legislative elections of October 4, where a coalition between the PSD and CDS-PP attain a relative majority. Because this coalition did not have majority parliamentary support and failed to secure support from other parliamentary groups (namely PS), the government program ended up being rejected and the government was disbanded. In tandem, the leader of PS was able to secure support from the BE, PCP and PEV, therefore ensuring a parliamentary majority. This situation, where a non-elected party ends up leading the government, was a first in Portugal.

Box 5.2. Aspects solved in the final version of the *MSP framework law*

Because the interviewing process partially took place before the MSP framework law was published (see Footnote 87), some of the weaknesses and challenges that were pointed out by informants regarding the law were in fact addressed and amended in the ambit of the parliamentary discussion process, therefore being "solved" in the law's final version.

• The absence of a ***strategic vision*** for the future of Portuguese ocean planning and management was mitigated in the final version of the law because of: (1) a new article was added defining that, concomitantly to MSP instruments, the national MSP system is to encompass "strategic policy instruments for the spatial planning and management of the national maritime space, namely the National Ocean Strategy" (article 6) – also acknowledged as an additional strength of the MSP framework law (Table S5.7, SM); (2) a new point was added to article 1 addressing the goals of ocean planning and management policy for Portugal, and stating that such policy "defines and integrates the actions promoted by the Portuguese State, aiming to ensure an adequate organization and use of the maritime space, in the context of its valuation and safeguard, with the purpose of contributing to the sustainable development of the country".

• Both a scientist (external observer) and an individual consulted in parliamentary hearings (Table S5.8, SM) stated that the law's first preference criterion for establishing prevailing uses did not specify to ***whom the "major economic advantage" was to revert***. This raised uncertainties on whether such advantage was, as expected, to the Portuguese State or to the private sector. In the final version of the law this was reformulated and it now article 11 clearly states that the "major social and economic advantage [is] *for the country*, namely through the creation of jobs and qualification of human resources, creation of value and contribution for sustainable development".

• In regards to concerns on whether the ocean private use would properly account for, and ensure, the ***national interest***, a new point was added to article 16, and the law now specifies that such private use is allowed for "a use of the marine environment, marine resources or ecosystem services greater than the one obtained by common utilization, *and which results in a benefit to the public interest*". Although the justification for such use remains vague, "public interest" is now at least enshrined in it.

• The maximum ***duration for concessions*** was reduced from the original period of 75 years to 50 years, following a joint proposal from the PSD, PS and CDS-PP parliamentary groups (see [143]). The PCP also presented a proposal, pertaining to a maximum duration of 10 years (eventually extended until a maximum of 40 years) and the BE proposed that concessions would be excluded from private use titles, thus limiting such titles to licenses (with a maximum duration of 15 years) and authorizations [143]. Although the approved 50 years period is still long, it was in fact reduced by a third.

• A NGO representative (external observer) identified as a weakness that the law did not specify if private use titles were to be withdrawn in case title holders did not ensure an ***effective use of the space*** (Table S5.8, SM) because this had already been a relevant problem in other Portuguese contexts. A new point was added to article 17 stating that the granting of a permit "obliges title holders to an effective use" of the maritime space.

• Changes were also introduced on the ***insufficient integration of the Autonomous Regions***: (1) on the definition of competences, article 5 now states that although the Government is responsible for developing and coordinating national MSP this is to be done "without prejudice to the powers exercised within the framework of a *shared management with the autonomous regions*"; (2) a new point was added to article 12 specifying that "the participation of *authorities from the Azores and the Madeira* Autonomous Regions, in the area of their powers" is to be ensured in the elaboration, change, revision and suspension of MSP instruments; (3) the Government is now obliged to inform the *governing bodies of the Autonomous Regions* regarding the report presented every three years to the Portuguese Parliament on the state of national marine planning and use (article 31).

(continues)

• Two scientists (external observers) advocated that the *low water tide mark along the coast, represented on large-scale official nautical charts* was an ***inappropriate baseline*** to define the Portuguese maritime space (Table S5.9, SM) – it should be substituted by the hydrographical zero. Although this was not changed, article 2 now states that the baseline selection directly derives from UNCLOS [a], which provides substance to the decision.

• This direct reference to UNCLOS also smooths a different weakness, as identified by other two scientists (external observers): it does not clearly state that national maritime space beyond the 200 nm is ***limited to the seabed and subsoil***, and superjacent waters remain under international jurisdiction (Table S5.8, SM). This was considered to be misleading to the general public. However, a clear reference to UNCLOS within article 2 (although in a different point) establishes a link to the place where jurisdiction and sovereignty issues are essentially addressed, mitigating this aspect.

• It can still be argued that the ***marine environment*** remains "second" when set against economic goals, but some positive changes were introduced: (1) in article 3 it was added that integrated management must also ensure coordination and compatibility between national MSP *and environmental and spatial planning policies*; (2) in article 4, it can now be read that the objective of national MSP is to foster "the *sustainable* economic exploitation" of resources and ecosystem services; (3) also in article 4, it was added that actions carried under national MSP must comply with attaining GES (and not only maintaining it); (4) the same applies to article 17, on the conditions title holders must ensure; (5) article 11 now states that the preference criteria for establishing prevailing uses in case of conflict are *only applied if GES on marine and coastal areas is ensured*; (6) reports on the state of national MSP now have to include information on monitoring and evaluation of GES to ensure sustainable development (article 31).

• Although the planning-licensing duality remains, and MSP instruments are still not comprehensively described, a new article 6 was added to the law in regards to the ***marine planning and management system***, where both the strategic and operational instruments of such system are clearly identified.

• The insufficient ***articulation with other spatial planning instruments*** was mitigated with the addition of a new point to article 27. Initially it merely stated that the articulation/compatibility between MSP instruments and other planning instruments was to be made according to complementary legislation (not specifying anything). Now it establishes the need to ensure such articulation/compatibility whenever instruments focus in common areas, or areas requiring an integrated coordination for planning. The law still does not specify "how" to achieve such articulation, but now it is at least mandatory.

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[a] Article 5 of UNCLOS specifies that "the normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State" (italics by the author) [157].

MSP framework law's weaknesses

Regarding the MSP framework law weaknesses, even after the parliamentary discussion it continues to have a planning-licensing duality, by continuing to present a similar focus in the spatial planning and the use of the maritime space – which according to some informants is incorrect because a spatial planning framework law should in fact be solely focus on the *spatial planning* topic. Besides the existence of a somewhat economic-based approach, this might have occurred in order to give a clear sign to investors and entrepreneurs, a way to show them that there was a real political will to foster the development of a Portuguese blue economy.

An additional issue that arises from this duality, is that the MSP system ends up not being extensively established in the framework law – although there was an effort to strength it during the parliamentary discussion process (see Box 5.2 on *aspects solved in the final version of the MSP framework law*). In fact, the two types of national MSP instruments, the pillar for the MSP system, were only properly detailed in the MSP Diploma (see Box 5.3). Only then was it explained that while the Situation Plan was intended to identify the distribution of uses and resources within the Portuguese maritime space, Allocation Plans were to identify, and allocate areas to new uses. It is evident that not all the details presented in the Diploma could (or should) have been included in the MSP framework law – such as the description of the contents of each type of MSP instrument, or the procedures for their development, approval, amendment, etc. However, some basic information on the *nature* of these instruments would actually be expected. Moreover, the new terminology of these instruments might pose some extra challenges by being somewhat confusing to people, who are not yet used to them given they do not have a direct parallel in the terrestrial planning system. Concomitantly, as a *law* the MSP framework law is not subject to public consultation. Although this is the formal procedure, and while acknowledging that writing the law from scratch in the scope of a participative process could be *challenging*, to say the least, the law could nevertheless have been subjected to the opinion of the general public. This would certainly be important for its *acceptance* because, just like stated for the POEM, when people feel their opinion is heard and considered, they tend to develop a sense of ownership, and even if they do not entirely agree with the end result, they become more open and responsive to it. As well, this broader participative process could further highlight some important issues beforehand, thus bringing significant information to the table. Another identified limitation, and a much criticized aspect regards the articulation between MSP and terrestrial planning, because *how to do it* is left open in the MSP framework law (and here the Diploma also does not comprehensively solves this issue[240]). It was also argued by more than one informant that by being a vague document, and leaving too many aspects to be solved in ensuing legislation, the law was a *blank cheque* for national MSP. And this was clearly a negative aspect because it posed a risk, the risk from allowing *everything*, from approving a document without knowing what it has

[240] See Chapter 4, Section 4.5.

planned further down the road. Despite the unquestionable validity of the argument, this blank cheque also enshrines an opportunity. An opportunity for *implementation* measures to be appropriate. Because given that the law is such a broad document, in the end it will all go down to its implementation. And this will in turn depend on the MSP Diploma, which will ultimately rely on the MSP instruments, i.e. the Situation Plan and Allocation Plans. So, if MSP instruments do have "degrees of freedom" regarding how they are developed, monitored and revised – and they seem to have – one can argue that, for better or for worse, it all goes down to the "local" scale. Concomitantly, the absence of a financial fund for marine conservation and scientific research was another identified shortcoming of the MSP framework law, and one not solved by the Diploma. This is, however, the case of another clear example on how political events have a paramount influence in the development of public processes. In fact, one of the PS amendments to the law pertained to the creation of such fund, but it was rejected due to negative votes from both PSD and CDS-PP[241]. Some informants however anticipated that in case there was a future political change in favor of PS, some non-consensual aspects of the MSP framework law – such as this one – could be further revisited. And exactly as foreseen, following the 2015 government change, in which the PS became in charge of the Government[242], in March 2016 a Portuguese *Blue Fund* was created to "develop the maritime economy, the scientific and technological research, the marine environment protection and monitoring, and maritime safety" [175]. In this case the political influence worked in a positive way, however in many other cases it is the other way around. Therefore, the conclusion is that these processes should not be as permeable to politics. Finally, the time length for private use titles was a controversial aspect, although somewhat minimized in the final version of the law (see Box 2). However, more important than to put the emphasis in such time frame, is to have the operational mechanisms to monitor and amend such titles. Monitoring both ocean planning and ocean uses is essential to *know* how everything is evolving. And then we need to have the mechanisms to intervene in case a problem is identified – e.g. suspension of use title if GES is compromised. In the context of having such mechanisms, and ensuring a true ongoing assessment, the time length for use titles becomes rather irrelevant and secondary. In the limit

[241] See Section 5.4.5, when addressing the fourteenth weakness of the MSP framework law.

[242] See Footnote 240.

it would be the same to have use titles with a maximum duration of 5 years or 75 years – in particular because within a period of five years in the absence of such mechanisms severe and irreversible environmental damages could also occur.

POEM–law link

In what relates to the link between the POEM and the MSP framework law, and the corresponding concerns and doubts shown by different informants regarding the possibility of actually having such connection established, in March 2015 the link was confirmed. This aspect was in fact not solved in the MSP framework law, which only implied at it, but only later on with the publication of the Diploma (see Box 3). The latter states in black and white that until the approval of the Situation Plan "the *Plano de Ordenamento do Espaço Marítimo (POEM)*, whose dissemination was established with Ruling No. 14449/2012 (…) constitutes the *reference situation* for the *spatial planning* of the national maritime space and for the *granting of new private use titles*"[243] [30]. And this makes the utmost sense as the POEM was in fact the first approach towards Portuguese MSP. For the sake of many people's perception on the process, maybe even more than for operational reasons, it is also extremely important to verify that although the POEM was "downgraded", it was not left behind. A very curious aspect and extremely interesting point, however, is that after all these changes and turns, the POEM is currently the formal document upon which all Portuguese marine planning and licensing decisions are to occur. Although the Situation Plan was to be approved within a maximum of sixth months after the Diploma's publication date, i.e. by September 2015, it is still under development, and current predictions are that it will be finalized by the end of 2016. This means that, after being downgraded to a study, the POEM ends up being the official reference document for Portuguese MSP during about 19 months – if no additional delays take place.

[243] Article 104, on reference case. Italics by the author.

Box 5.3. Aspects solved in the *MSP Diploma*

Despite the fact that there was a comprehensive parliamentary discussion on the MSP framework law, such discussion did not solve all limitations that were identified by informants. In fact, while some remain to date as future challenges for Portuguese MSP, others were further addressed, and developed in the MSP complementary regulations (the Diploma).

• The risk from having a ***long waiting period*** until the approval and publication of the Diploma – especially relevant due to the large number of points left to be decided there – was baseless. Within the six months established in the MSP framework law the initial version of the Diploma was broadly approved by the Council of Ministers, and c. 3 months later (January 2015) the Diploma was approved in its final form.

• The Government did have an opportunity to develop the Diploma *at will* (it not discussed during development), i.e. the ***blank cheque*** the MSP framework law provided for. But even if there is a period of time during which the Diploma is in force in the current form (to date, c. 13 months [a]) nothing prevents the Diploma from being further discussed in the Portuguese Parliament.

• Although the MSP framework law recognized that national MSP aimed at building on available information (article 4), only in the Diploma was the ***formal link to the POEM*** clearly established.

• A member of the CT identified as a weakness that the MSP framework law did not establish ***entities with responsibility over national MSP*** (Table S5.8, SM). The Diploma addresses this issue establishing DGRM and DGPM as the responsible entities (DGRM is in charge for compiling MSP instruments and making them available for consultation, as well as for several other aspects, while DGPM is responsible for national MSP monitoring and development of assessment reports – see Chapter 4).

• ***MSP instruments***, the basis for the MSP system, are finally comprehensively described in the Diploma. Articles 4 to 45 exclusively pertain to the two types of national MSP instruments – i.e. the Situation Plan and Allocation Plans (see Chapter 4). The rules for their development, approval, amendment, revision and suspension are all laid down in the Diploma.

• The ***financial and economic regime*** is further addressed, pertaining to an entire section of the Diploma. A scientist (external observer) identified as a weakness that the MSP framework law did not identify any revenues for the Portuguese State (Table S5.8, SM). The Diploma address this, specifying that a utilization tax, i.e. TUEM, will be applied to all concessions and licenses (see Chapter 4). Here, 75% of collected taxes are to be granted to DGRM (to financially support the improvement of national MSP, to achieving/maintaining GES, and to improve maritime safety services/systems), while the remaining 25% are to revert to the State or to the Autonomous Regions.

• An individual consulted in parliamentary hearings identified as a weakness that instruments for ***environmental assessment*** were not specified in the MSP framework law (Table S5.8, SM).The Diploma, conversely, establishes how environmental assessments of both the Situation Plan and Allocation Plans must occur (see Chapter 4). However, because it establishes that in this context Allocation Plans are to be treated as projects, being subject to EIA, the Diploma revisits an issue that some informants had identified as a "serious error" of some initial versions of the MSP framework (see Footnote 193).

• A scientist (external observer) argued that the MSP framework law failed by not encompassing ***mechanisms for the adaptive management*** of MSP instruments, as well as by not defining that marine spatial plans and private use titles should be subject to monitoring (Table S5.8, SM). These aspects are however clearly referred in the Diploma in articles 38, 39, 69 and 87, and in annex I.

• The ***safety valve*** issue identified for the MSP law is also mitigated in the Diploma because it states that private use titles can be amended whenever there is a change in the existing and fundamental conditions for the granting of the title (in particular, the degradation of GES in marine and coastal areas), or if there is a natural catastrophe or in other cases of force majeure (article 69).

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[a] The Diploma was published in March 12, 2015 and came into force in May 11, i.e. 60 days later.

Environmental concerns

Environmental aspects also showed very interesting results. First, in what regards the **role of the environment** in MSP processes, the large majority of informants – i.e. almost 70% – believes that the environment must be the basis upon which MSP is to be built. And this similarly includes participants in the POEM, participants and in the MSP framework law and external observers. The same goes for affiliations: all members of State agree on this, together with all independent consultants, over half of government representatives, and two thirds of both academia members and NGO representatives. This means that, at least from a theoretical point of view, everyone seems to agree that the environment is essential, that it must be the basis for ocean planning and that it cannot be jeopardized. Here, an interesting aspect is that almost a third of these informants clearly stated alongside that *fundamentalist* views on nature conservation had to be avoided at all costs. This is a key issue, because many times due to such fundamentalist views "the environment" ends up losing credibility and its importance is consequently diminished. As stated by a senior legal adviser, in many situations, out of fear for having to deal with *too much* environment and fundamentalist views, Portuguese processes end up keeping the environment to a minimum[244]. And this is bad for everyone. Concomitantly, four informants argued that instead of being the foundation for MSP the environment should be treated as another sector. Curiously, on the contrary to what could be expected two of these informants were natural scientists. However the presented arguments for treating environment as a sector pertained to avoiding such conservation fundamentalisms.

In regards to **EBM**, opinions are similarly distributed among EBM being a "theoretical concept" or a "practical tool for sustainability". An interesting, and very curious, aspect is that the arguments provided either against or in favour of EBM's operationalization potential were mostly the same. Either informants argued that "yes, it is a practical way to foster environmental sustainability" but "no, we still do not know how to do it", or the answer was "yes, it is only a theoretical concept" but "one of paramount significance". Overall the expressed idea was that (i) EBM is a key concept for ocean planning, (ii) no one still knows exactly how to implement it, and (iii) it is essential that the scientific community keeps making an effort to learn how to make it operational. It was also largely mentioned that EBM is currently a *catchphrase* present in all

[244] See quote in Section 5.4.9, when addressing the fourteenth challenge for national MSP.

relevant documents, such as it happens with sustainable development[245]. But this goes far beyond the Portuguese context. Despite the widespread research efforts on EBM[246], to date there still is not any global guide with standards on how to implement it, and in most cases approaches are being tested only at a local scale.

Finally, in what pertains to how both the **POEM and the MSP framework law encompass environmental concerns**, the majority of informants believe these issues are insufficiently addressed – respectively c. 37% and c. 45% of informants. In the POEM case this derives from treating the environment as a sector (due to the lack of scientific data), and from not envisioning the creation of new MPAs. In what concerns the MSP framework law, informants believe that the environment is not properly considered mostly because it comes second when set against economic concerns.

Future challenges

There seems to be a variety of future challenges for Portuguese MSP, as described in Section 5.4.9. However two gathered the consensus of a particularly high number of informants. First overcoming limitations of the Portuguese governance system (supported by almost 60% of informants). Second, the development of a maritime economy (c. 42% of informants) because a lot of people are truly convinced that having it in place in the forthcoming decade it merely a *utopia* due to a myriad of reasons, such as physical difficulties and financial limitations. In what concerns the financial capacity to support MSP, this was somewhat mitigated with the creation of the Portuguese Blue Fund, as well as the existence of Operational Programs based on Community funds, such as the *Mar 2020*, which aims to implement support measures related to the fisheries and aquaculture sectors. One identified future challenge that is of paramount relevance pertains to the issue of public participation. This is definitely a challenge for Portugal, not only for Portuguese MSP, and will only be solved with time, given it is based on a cultural issue. Although public participation is of the utmost relevance, citizens are not used to take part of these processes. At the same time, responsible entities sometimes take actions that do not comply with the promotion of such participation. Take for example the case of the POEM, where

[245] The conceptual link between the two topics is addressed in Chapter 2, Section 2.2.

[246] When searching the web of science for scientific papers on "ecosystem-based management", "ecosystem-based approach" or "ecosystem approach", a total of 2655 results appear from 1957 to 2016 (however only in the 1980s does the number of publications increases – only ten documents are found up to then).

no formal feedback was provided regarding what was, and what was not, used from the public consultation process. It is true that such feedback was not mandatory (see Box 5.1) but it nevertheless was of paramount importance. Situations like these cannot take place when we are trying to promote the involvement of the general population. Citizens and stakeholders need to be assured that their contributions are worth something, otherwise they will not keep "wasting" time with these processes. The resolution of this public participation issue will have to be developed hand-in-hand with another challenge – the development of ocean literacy. In fact, as people start learning about the importance of the ocean, as well as on the relevance of ocean planning and management processes, they will be increasingly aware of the real need to take part in these processes. Finally a major challenge pertains to ensuring baseline knowledge on Portuguese marine biophysical resources – because such knowledge in the baseline upon which the entire MSP process will have to build in order to be sustainable. In fact, without such knowledge we will always be building our planning and management processes on top of a great level of uncertainty. Available information on marine resources decreases uncertainty and improves the understanding about the national maritime space. Planning and management decisions are, then, more likely to encompass all interests and values at stake, and to ensure the necessary trade-offs to achieve sustainability. Although it is evident that it is better to have a certain degree of management in place than to have nothing, the smaller the uncertainty the better. This baseline knowledge however has costs, and will not be done overnight. One possible approach to do this would be to start collecting all the existing data on the Portuguese maritime space, and compiling it into a single repository. And this would be extremely important to do even before new data is produced. But this is in itself a major challenge, which requires a substantial level of human and time resources. Moreover, as stated by Le Cornu et al. in a recent review on the use data for MSP [176] "all planning processes ultimately require adequate information on both the biophysical and social attributes of a planning region. In coastal and ocean planning practice, there are well-established methods to assess biophysical attributes; however, less is understood about the role and assessment of social data". Closely related to this issue is the challenge of environmental protection and the recognition of environmental thresholds – because only by identifying such thresholders can we be sure not to cross them. However, one could advocate that this knowledge will never be absolute, given that pristine areas no longer exist, and that it is extremely difficult to distinguish changes that derive from

the natural evolution of ecosystems from human induced changes. Nonetheless, we need to at least make an effort to estimate where such thresholds might be.

Box 5.4. *Diverging views* between perceived strengths-weaknesses

There are clear opposing views in what regards some of the strengths and weaknesses that were identified for both the POEM and the MSP framework law (see Figure at the end of the box).

• In what concerns THE POEM, the first topic that raised such views pertains to ***public participation***. It is curious to see that the weakness that gathered a largest agreement among informants (c. 37%) is also extensively perceived as an important strength (c. 45%). Some people are convinced that public participation was largely insufficient while others believe there was a very acceptable degree of specific stakeholders and general population involved, and that dissemination efforts were largely present. These two sets of informants present a similar distribution in what regards primary roles in the process and affiliations, thus different perceptions cannot be explained by informant's characteristics.

• The same goes for the selected legal framework under which the POEM was developed. Being developed as a ***Sector Plan*** is in fact simultaneously perceived as a strength by c. 16% of informants and as a weakness by c. 13%. And again informant's characteristics are not sufficiently different to explain such discrepancies.

• Five other opposite views were expressed regarding the POEM, however this time with much differing proportions:

(1) While c. 47% of informants identified the development of a ***sense of collectiveness*** as a major strength and 11% believed that POEM's participants remained linked in a network even after POEM's ending, a member of the MT plus a member of the SEA team clearly advocated that there was a real risk from losing the team spirit gathered during POEM's development because of the large period of time until it was published, together with its unclear ending (Table S5.6, SM);

(2) While c. 34% of informants believe that a ***future strategy*** for the Portuguese sea is absent from the POEM, two members of the MT believe that a strategic vision is clearly ensured (Table S5.5, SM);

(3) About the ***role of the environment*** c. 16% of informants negatively acknowledged that it was treated as a sector, but on contrary a member of the CT argued that an important lesson learned by POEM's participants was that the environment must always be treated as the baseline for MSP (Table S5.5, SM);

(4) Regarding the ***SEA of the POEM*** c. 13% of informants identified it as a clear strength, while a member of the MT and a scientist (external observer) are convinced that it was largely inappropriate and poorly developed because it was not started right at the beginning of the process (Table S5.6, SM);

(5) While c. 8% of informants believe that many of POEM's shortcomings derived from having INAG as the ***coordinating entity***, a member of the MT strongly advocated that the person in charge for INAG provided an extremely good leadership to the process (Table S5.5, SM) and that it was such leadership that allowed for some of POEM's major strengths, such as the development of a team spirit, the improved communication, and the holistic view among different sectors.

• In regards to THE MSP FRAMEWORK LAW, there are also a number of conflicting views. The first topic that raised them pertains to protection of the ***marine environment***. It is again curious to see that the weakness that collected a largest agreement among informants (c. 42%) is simultaneously perceived as a strength (c. 16%). While some informants are convinced the environment is not properly considered in the MSP framework law coming second to economic concerns, others believe that not only is it totally safeguarded, but it is also recognized as the *premise* for economic development. While the first group includes informants from all types of roles and all affiliations (with the exception of members of State), the second one is limited to members of State and government representatives.

• The second topic that is differently perceived regards the ***articulation between MSP and terrestrial planning*** instruments. While c. 39% of informants believe that the link is not properly ensured in the MSP framework law, c. 11% believe that on the contrary the law guarantees such link. While in the first case there are informants from all types of roles and affiliations, in the second one informants are mostly limited to a participants in the MSP framework law and members of State.

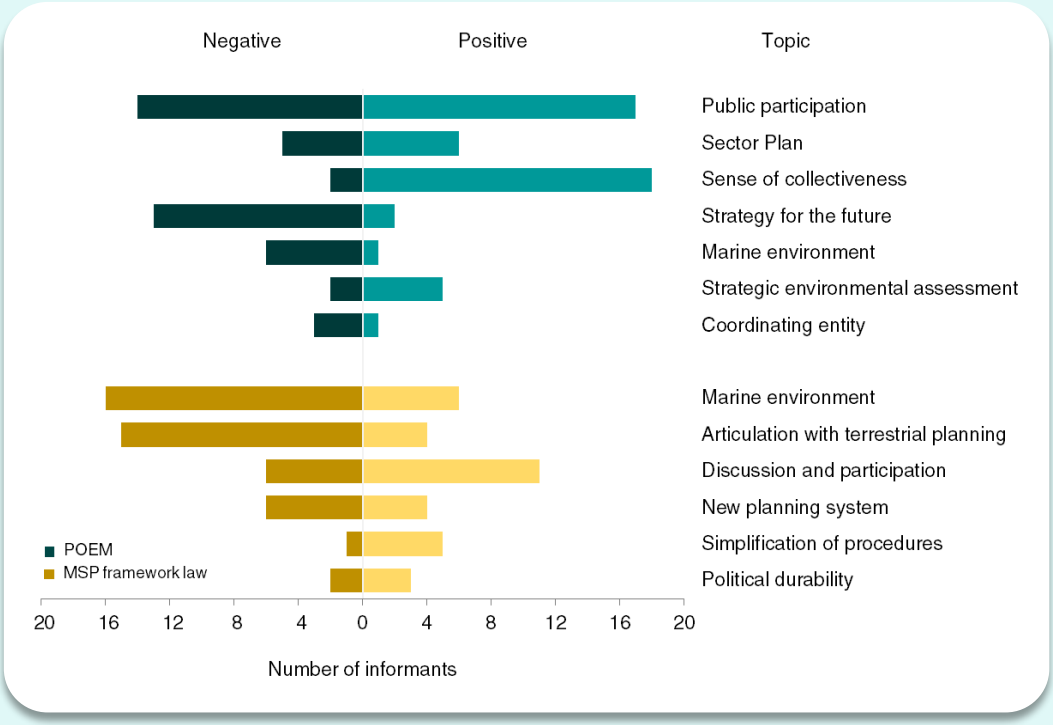
• Third, while c. 29% of informants are convinced that the MSP framework law was ***properly discussed with a broad set of actors*** in the scope of a comprehensive parliamentary discussion process, and consequently improved, c. 16% advocated that the law was not developed in a truly participative way from the very beginning, and that the writing itself could have benefited from a participative process. While the first opinion is almost exclusively supported by participants in the MSP framework law, the second view is held by informants from all types of roles and affiliations.

• A fourth topic that raises opposing views pertains to the development of a ***new planning system***. While c. 11% of informants believe that developing a totally new planning system for the marine space is an asset by allowing for the integration of marine environment specificities, c. 16% of informants argued that having such new system instead of a unique one for both land and sea would only pose extra challenges and threats to ocean management. While the first opinion is mostly supported by participants in MSP framework law and members of State, the second view is particularly supported by people that did not participate in the law, and similarly distributed among affiliations.

• Two additional opposing views were expressed regarding the MSP framework law, but this time with smaller proportions:

(1) One regards the ***simplification of procedures***. While 13% of informants believe that the simplification of procedures for the licensing of maritime space is a relevant strength, a member of the MT clearly expressed his concerned regarding the risks that can arise from having an excessive simplification of procedures, such as inappropriate environmental assessments (Table S5.8, SM);

(2) The other pertains to the ***durability*** of the MSP framework law itself. Contrary to c. 8% of informants who advocate that the law will endure along different legislatures because it gathered a broad political consensus and was approved with a large political support, two individuals consulted in parliamentary hearings believe that there is a real risk of having the law being thrown away when there is a government change (Table S5.8, SM).



Diverging and converging perceptions

Finally, in tandem to all of this, the analysis of results allows for a clear understanding that there is a number of conflicting views in what relates to some of the aspects that informants consider to be positive or negative. Take for example the case of the Sectoral Plan framework in the POEM. While a number of informants argued that this is one of its major weaknesses, and also one of the reasons why it was published as a study, other informants believe that being developed as a Sector Plan is a strength of the POEM. The same applies to how marine environment is considered in the MSP framework law. In fact, while some informants believe it is properly safeguarded, thus considering it a strength, others are truly convinced that the law jeopardizes marine protection (see Box 5.4 on *diverging views*). But concomitantly to these opposing views, a number of similarities can also be found between informants' opinions on the POEM and the law. For example, some aspects such as the existence of a national MSP instrument, or the will to foster the development of a maritime economy are recognized as strengths for both the POEM and the MSP framework law, while showing insufficient environmental concerns or the absence of proper public participation were identified as weaknesses for both processes (see Box 5.5 on *converging views*). These different views are related to the fact that different people tend to have different perceptions over one same process according to their personal experiences and perspectives. And this will tend to remain. What is important in this context is to ensure that such different perceptions result from people's opinions, and not from misinformation or lack of knowledge. The Portuguese MSP process still has a long way to run. Although almost a decade has passed since the beginning of the POEM, we are still in the very beginning of the MSP process given that so far Portugal never actually had a government approved marine spatial plan. This means that all the challenges that arise from implementing MSP, monitoring MSP, and revising and adapting MSP are still to come. And this long path is likely to be filled with complications and obstacles that will need to be overcome. However, Portuguese responsible entities already learned significantly and gained expertise regarding MSP, which will be fundamental in paving the way towards achieving a sustainable and sustained MSP process. But only time will tell.

Box 5.5. *Converging views* between POEM and MSP framework law

• Alongside conflicting views, deep similarities can also be found between opinions expressed about the strengths, and the weaknesses, of both the POEM and the MSP framework law (see Figure at the end).

• The first similarity pertains to ***proper public participation***. This was identified for both the POEM and the MSP framework law, and in both cases by a considerable amount of informants (c. 45% and c. 29%, respectively). The distribution of informants according to roles is a bit different though. While in the first case there is a similar distribution among roles, with a slightly preponderance of participants in the POEM, in the second almost all informants are participants in the law development.

• By contrast, the ***absence of such good participation*** process was also identified for both initiatives. While c. 37% of informants advocated it for the POEM, c. 16% did it for the MSP framework law. In both sets there is a similarly distribution among roles. Regarding affiliations, the first set shows a preponderance of academia members, and in the second one no members of State or independent consultants are found.

• Third, the ***absence of a future strategy*** in common to both the POEM and the MSP framework law. While c. 34% of informants identified it as a weakness for the POEM, c. 18% did it for the law. The distribution of informants according to roles and affiliations is once again similar.

• Fourth, showing ***insufficient environmental concerns*** was another weakness identified for both initiatives. While c. 42% of informants advocated it for the MSP framework law, c. 16% did it for the POEM. The distribution of informants is similar among roles in both initiatives, but when it comes to affiliations the first set presents a majority of academia members while the second one shows an absence of NGO representatives and independent consultants.

• Again by contrast, a number of informants do believe that ***environmental concerns are properly considered*** in both the POEM (c. 16%) and the MSP framework law (c. 13%). In the first case informants argued in favor of the plan being subject to SEA, while in the second this positive opinion derived from properly considering the environment as a premise for development. In both cases informants are similarly distributed among roles, and in regards to affiliations there is a clear preponderance of academia members.

• The ***"exclusion" of the Portuguese Autonomous Regions*** was also expressed as a negative aspects for both MSP initiatives. While c. 16% of informants advocated that Madeira and Azores responsibilities over their ocean areas were insufficiently considered when developing the MSP framework law, thus leading to the development of a political "resistance", c. 11% of informants believe that a major POEM's weakness is that it ended up not including ocean areas of the Azores (who develop the POEMA instead) and Madeira (where no MSP initiative was carried). In the first case there is a preponderance of participants in the POEM, and no members of State or independent consultants are found; in the second one, informants are similarly distributed among roles and affiliations.

• Five other similar views were expressed, but this time with much differing proportions (with a ratio ≥4):

(1) While c. 58% of informants recognized the existence of a ***national MSP instrument*** as a major strength of the POEM, 8% advocated that having a MSP legal instrument (i.e. a framework law) was essential for Portugal;

(2) While c. 39% of informants believe that the ***articulation with pre-existent spatial planning instruments*** is not sufficiently ensured in the MSP framework law, c. 8% argued that such articulation is also not properly guaranteed in the POEM;

(3) It was stated for both the POEM and the MSP framework law that an ***economic-based approach*** was being followed. While this gathered a high consensus on the MSP framework law (c. 34% of informants), only a member of the CT and a scientist (external observer) identified it as a weakness for the POEM (Table S5.6, SM);

(continues)

(4) While c. 21% of informants expect the MSP framework law to catalyze the ***development of a maritime economy*** by allowing ocean use, a member of the MT and a NGO representative (external observer) advocated that the POEM had a very positive impact close to private investors and that it fostered the use of the ocean (Table S5.5, SM);

(5) It was stated that both the POEM and the MSP framework law properly identified the ***need for integration with terrestrial spatial planning***. While c. 11% of informants identified this for the MSP framework law, only an individual consulted in parliamentary hearings considered it to be a strength of the POEM (Table S5.5, SM).

• Finally, two additional analogous opinions were expressed regarding the POEM and the MSP framework law, but by an extremely reduced number of informants:

(1) There is risk from ***including the continental shelf area beyond the 200 nm*** in national MSP instruments, because its outer limits are not yet internationally recognized [a]. It is curious to see that the exact same aspect was separately considered as weakness by two different informants – an individual consulted in parliamentary hearings and a scientist (external observer) – but only for one of the two MSP initiatives, and not for both (Tables S5.6 and S5.8, SM);

(2) In regards to the ***baseline used to establish the Portuguese maritime space***, while two scientists (external observers) advocated that the MSP framework law inappropriately used the *low water tide mark* as the baseline (Table S5.8, SM), an individual consulted in parliamentary hearings argued that the POEM inappropriately used the *maximum spring high water tide* mark as the baseline (Table S5.7, SM). In both cases it was argued that the right baseline would be the "hydrographical zero", an established reference plane located below the minimum low tide mark and to which all isobaths represented in Portuguese nautical charts refer to.

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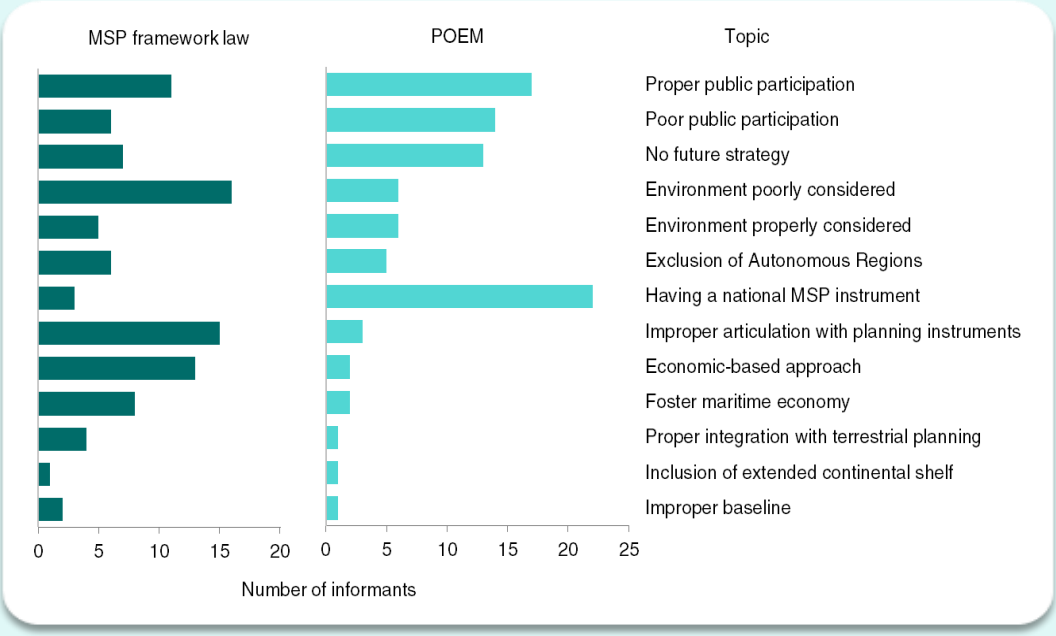
[a] As stated in Chapter 1, in 2009 Portugal submitted a proposal to the United Nations for the delimitation of its continental shelf beyond the 200 nm. If a private use title is granted for using an area (i.e. seabed and subsoil) beyond the 200 nm according to the proposed outer limits, and afterwards such area ends up not being included in Portuguese territory, such situation can lead to conflicts between private users, Portuguese responsible entities, and international authorities. This happens because the proposed outer limits might be redesigned, and if not included in Portuguese territory such area is considered to be world heritage.



6 Final Considerations

6.1. Key findings

As established in Chapter 1, this dissertation aimed to investigate the role of MSP in achieving sustainable ocean management using the Portuguese process as a case study. Three main research questions were to be answered, and the corresponding key findings are summarized below.

1. **How can MSP contribute to ensure sustainable ocean management, one that ensures resilient and healthy marine ecosystems?**

This question was addressed in Chapter 2. Although largely recognized as an essential tool to implement ocean policies goals, as well as sustainability and EBM approaches, MSP still faces challenges on how to translate principles into practice. General discussions acknowledge MSP as being *necessary*, *efficient*, and *useful*, but challenges still lie in the ability to implement such resolutions at the local scale.

A key question for the long-term adequacy of MSP is how it is actually addressing sustainability. Is it relying on strong or weak sustainability concepts? Does it prioritize the achievement of GES or blue growth? Although many advocated that MSP has its "roots" in nature conservation, as an extension of MPAs establishment, or that it simply catalyzes environmental sustainability by fostering the identification and allocation of areas for conservation purposes, others are convinced that, as MSP spread, its focus on EBM became more and more "diluted". This shift seems to have occurred due to an increasing need to manage conflicting ocean uses, especially in highly industrial maritime areas. It seems that current MSP initiatives are more focused on developing integrated use (weak sustainability), rather than on implementing EBM (strong sustainability). In what regards having strong versus weak sustainability concepts underpinning MSP processes, there are real differences and risks.

However, although ecosystem-based MSP is more "precautionary", by putting the emphasis in achieving and maintaining ecosystems good environmental status, there is no assurance that it will actually be more effective than integrated-use MSP in delivering sustainable ocean management. Ultimately, it will all depend on how marine planning and management processes are conducted, and how marine ecosystem thresholds are accounted and assessed within such processes.

An adaptive, ecosystem-based and integrated approach for the management of ocean uses seems to be, nevertheless, the best course for MSP to follow. Planning processes require attention and a capacity to adapt to changing circumstances in order to be sustainable and to sustain in time. An adaptive management approach allows for such flexibility, by means of allowing responsible entities to revise, reconsider and redesign their planning and management options in time. It directly contributes therefore to attain MSP long-term adequacy, as well as sustainable and resilient marine ecosystems.

2. To what extent is the Portuguese MSP process being developed in accordance with international recommendations towards sustainable MSP?

This second question was addressed in Chapters 3, 4 and 5, each focussing on a different part of the Portuguese MSP process and/or from a different perspective.

In Chapter 3 an analysis of both the POEM and the proposal for a MSP framework law was carried. The preliminary conclusions for the proposed law indicated that weak sustainability was its underlying principle, as environmental concerns seemed to come second against economic goals. However, if an adaptive approach was to be truly implemented in Portuguese MSP, the spatial planning, management and policy-making of ocean areas could be continuously adjusted, thus ensuring their sustainability. In what concerns the POEM, it also seemed to follow an integrated use (weak sustainability) approach towards MSP. However, although many times the POEM addressed sustainability in a very broad and general manner, not identifying specific ways to ensure it, its *management guidelines*, *measures* and *recommendations* strongly encompassed environmental sustainability concerns. Because the plan was not granted the status of a planning instrument but considered as a study, it is however rather unlikely that such management guidelines, measures and recommendations will ever be implemented as they stand. But analysing whether or not they contribute to

environmental sustainability, and to what extent, is still of relevance because in the near future Portugal will need a set of sustainability measures for MSP and POEM's documents may constitute the best basis for drawing up new operational measures.

In Chapter 4, an analysis was performed on the Portuguese MSP complementary legislation, which aimed to implement the MSP framework law, as well as to transpose the EU MSP Directive. The first environmental concern that emerged regards the possibility of having a predominantly economic-based approach. Environmental references correspond to only c. 2% of this Diploma contents (while in the EU MSP Directive environmental references correspond to c. 5% of the total contents). However, several important environmental topics were also addressed in the Diploma (in some cases at key points of the text), such as environmental *monitoring* and *evaluation*, *good environmental status*, *environmental protection*, and *sustainability*. In fact, there seems to be a clear concern on ensuring the assessment and monitoring of the MSP process, which is a key aspect for the timely identification of "warning signs" on marine ecosystems health. Additional environmental concerns were also found, namely pertaining to: the environmental assessment of MSP instruments; the implementation of environmental principles from the MSP framework law; and the lack of a scientific committee to monitor and assess both the MSP process and MSP instruments. Nevertheless, some of these issues might still be overcame, in particular if the Diploma is subjected to a detailed discussion within the Portuguese parliament, as it was intended to happen at the time it was published.

Contrary to Chapters 3 and 4, which are based on a direct analysis of MSP instruments, Chapter 5 provides the opinion of a number of key actors on how the POEM and the final MSP framework law address sustainability issues. The majority of informants seems to believe that environmental concerns were insufficiently addressed in both cases (c. 37% and c. 45%, respectively). In the POEM this derived from two reasons. First the environment was treated as a sector, namely due to the lack of scientific data. Second because the plan did not envision the creation of new MPAs. In regards to the MSP framework law, informants believe that the environment was not properly considered mostly because it seemed to come second when set against economic concerns – alongside the preliminary conclusions from Chapter 3.

3. What are the major challenges for the future of Portuguese ocean planning and management?

Although this topic was to some extent addressed in Chapters 3 and 4, it is Chapter 5 that thoroughly answers this question. There is a variety of future challenges for Portuguese MSP, some more strongly supported by key informants than others. The one that gathers more support regards the Portuguese governance system. There is a large number of national entities with overlapping competences on marine and coastal areas, and they are not used to collaborate. In fact, developing a culture of collaboration instead of competition inside the public administration is expected to be extremely challenging. Some informants however believe that the answer relies on communication, on learning to discuss, and on improving the understanding among entities. The second challenge that gathered a higher support is the development of a maritime economy. A lot of people are convinced that having ocean uses in place in the forthcoming decade it merely a *utopia*, due to a myriad of reasons, from physical constraints to financial issues. Another future challenge that is of paramount relevance pertains to public participation. This was identified as a national challenge, not just for MSP, but for the broader Portuguese context, and will only be solved in time given that it is based on cultural issues. In fact, citizens are not used to take part on these public processes and, at the same time, responsible entities sometimes take actions that do not promote such participation (e.g. citizens/stakeholders need to be assured that their contributions are worth something, otherwise they will not "waste" time in these processes). Solving this public participation issue will have to occur hand-in-hand with a different challenge: the development of ocean literacy. As people start learning about the importance of the ocean, as well as on the relevance of ocean planning and management processes, they will be increasingly aware of the real need to take part in such processes. An additional relevant challenge relates to the baseline knowledge upon which the entire MSP process must be built. Available information on marine biophysical resources will improve the understanding on Portuguese ocean areas, therefore decreasing uncertainty. Planning and management decisions are, then, more likely to encompass all interests and values at stake, and to ensure the necessary trade-offs to achieve sustainability. Finally, and closely related to this issue is the challenge of environmental protection and recognition of environmental thresholds. Only by identifying such thresholds can we ensure that they are not crossed. However, because pristine areas no longer exist, it is more and more difficult to distinguish changes that derive from the natural evolution of ecosystems from human induced changes.

6.2. Future steps

While this dissertation is largely focused on the first phase of a governance baseline, i.e. looking back and analysing past and present events, future research should also address the second phase of a governance baseline, i.e. *looking forward*. According to Olsen et al. [114], this second part is essential to put into practice all the lessons learned from analysing past events. According to these authors, *part 2* actually allows decision-makers to outline a *strategy for the future*, in order to deal with identified issues from the past and to adapt the long-term goals, near-term objectives and future strategies of MSP.

At this moment, new developments on Portuguese MSP are awaited expectantly. As shown in Figure 5.1c from Chapter 5, the Portuguese MSP process has never completed the five mains steps of the policy cycle, consisting instead of a number of portions of "unconnected" cycles. However, it now has a new opportunity, with the development of new MSP instruments as establish in the MSP framework law and its regulations. In fact, once the Situation Plan is developed and approved – which is expected to happen between late 2016 and early 2017 – new challenges will quickly arise. These include the implementation process of planning and management options, the proper monitoring and evaluation of individual plans and management strategies, and the revision of the entire process. These are new phases for Portuguese entities to deal with, given that so far they never occurred. Nevertheless during the last decade Portuguese responsible entities already learned significantly in regards to MSP initiatives, and this will be fundamental in paving the way towards a sustainable and sustained MSP.

Only time will tell if, and how, Portuguese MSP will achieve the goals established, especially in regards to environmental sustainability. However, as stated by Ehler, "planning for the future begins today" [12].

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Supplementary Materials

Table S3.1. General management guidelines of the POEM [88].

Code	General management guideline
GMG1	Commitments arising from compliance with programs of measures/monitoring programs set out in the framework of the WFD and the MSFD, regarding the achievement of GES in marine waters must have priority. Whenever possible, such programs must be in full synchronization with existing/future maritime activities.
GMG2	The administration and entities representing different use sectors must be in close coordination to properly assess how present and future uses of the maritime space develop, within an adaptive management framework
GMG3	Within the context of reviewing Special Spatial Plans and/or developing new ones (namely, Shoreline Spatial Plans and Protected Areas Spatial Plans) the proposed POEM's spatialization should be reflected, in order to harmonize all uses (nature conservation and biodiversity, fisheries and aquaculture, maritime transportation and ports, navigation, nautical tourism, sand/gravel dredging, energy production, etc.)
GMG4	In the marine/coastal area from the shoreline to the -30 bathymetric – which corresponds to an area of high biological productivity, high hydrodynamics, and with natural habitats and species of Community interest – only uses/actions that do not undermine, cumulatively, coastal dynamics processes, balance of biophysical systems, and the safety of life and property are allowed
GMG5	Because the multidimensional nature of the maritime space (seabed and subsoil, water column, water surface, air column) allows for different activities to coexist simultaneously in the same area, requirements for each activity must be properly known to promote such synergies
GMG6	There is a need for an operational management of the maritime space to promote its optimum utilization – by ensuring the best location and "timing" for each activity, looking for synergies, and avoiding/minimizing adverse effects on coexisting uses
GMG7	Potential transboundary effects on marine waters of neighbouring countries, or international waters, resulting from activities in Portuguese marine waters must be accounted for, and such activities must be compatible with nature preservation as well as with other maritime activities taking place in the same area
GMG8	Environmental preservation and sustainability concerns must be present throughout the processes of licensing/developing activities, and the assessment of socioeconomic impacts must always be performed if necessary
GMG9	Environmental compensations should be provided for whenever there are evidenced losses in one or more maritime activities, resulting from the development of existing uses or the installation of a new one (such compensations are to be negotiated between involved parties, aiming at a minimization of losses)
GMG10	Monitoring of infrastructures' installation/de-installation in the maritime space, assessment of subsequent environmental impacts, and the establishment of mitigation measures, must be developed accounting for commitments from implementing the WFD and the MSFD, and must be in line with established monitoring programs

Table S3.2. Measures from POEM's action program addressing environmental sustainability issues. Strategic domains and strategic guidelines are presented according to Figure 3.4a. Measures are displayed according to the time frame when they are expected to be achieved – short-term (6-12 months, i.e. by 2012), medium-term (4 years, i.e. by 2015) and long-term (9 years, i.e. 2020) [89]. Strategic Environmental Assessment (SEA) analysis is presented according to information from Partidário et al. [87]. EC: Ecosystem conservation. SUS: Sustainable use of resources. KN: Knowledge gathering. S,M,L: short, medium and long-term. (●) Yes. (●) No. (**) Structuring measure.

Code	Measure (description and SEA analysis)	Sustainability Dimension	Strategic domain | strategic guideline	Time frame S,M,L	Original code
M1	Development of an 'information folder' on the POEM, and of a digital platform with information on intended uses of the Portuguese maritime space, including management guidelines. SEA: Contributes to the dissemination and sharing of knowledge, for guidance on sustainability issues	KN	A | Geostrategic space	●●●	A.1.1
M2	Stimulate a number of events related to the oceans (e.g. conferences, congresses, courses. SEA: Contributes to the dissemination and sharing of knowledge, for guidance on sustainability issues	KN	A | Geostrategic space	●●●	A.1.3
M3	Develop a Fisheries Sector Plan, with the identification and characterization of fishing grounds, together with the definition of guidelines for fishing activities and for other maritime uses. SEA: Potentiates the economic valuation of natural resources and thus their sustainable use	SUS	B | Economic valuation	●●●	B.1.3
M4	Identify/define areas and itineraries that allow the development of sustainable tourism activities, particularly within areas for nature conservation; promote activities such as scuba-diving and whale watching; promote the involvement of local communities in such activities. SEA: Allows for sustainable valuation of nature conservation areas according to an ecosystem-based approach, thus strengthening socio-ecological systems	SUS | KN	B | Synergies	●●●	B.2.1
M5	Develop studies to identify/map marine species and habitats, characterize their conservation status, and fulfil knowledge gaps in the ambit of the MSFD and other international commitments. SEA: Concerns the establishment of protected areas and management plans, ensuring the achievement of GES on marine waters, and coordination with coastal zone management. Aims at developing studies together with an information/intervention system on marine ecosystems and biodiversity, thus promoting their sustainable use	EC | KN	C | Protection and conservation	●●●	C.1.1
M6	Create a program to identify, design and establish a network of marine protected areas and marine Natura 2000 network sites (i.e. Special Areas of Conservation and Special Protection Areas). SEA: Concerns the establishment of protected areas and management plans, ensuring the achievement of GES on marine waters, and coordination with coastal zone management	EC	C | Protection and conservation	●●●	C.1.2
M7	Broaden the scope of the M@rBis (Marine Biodiversity Information System) Program to maximize data information and operational means, increase the participation of institutions and economic agents in scientific research, and promote entrepreneurial initiatives related to marine resources. SEA: Aims at developing studies together with an information/intervention system on marine ecosystems and biodiversity, thus promoting their sustainable use	SUS | KN	C | Protection and conservation	●●●	C.1.3
M8	Create projects/programs to ensure monitoring of maritime space, its resources and activities, assessing risks and minimizing their impacts, in line with the MSFD objectives and other international commitments. SEA: Concerns the establishment of protected areas and management plans, thus ensuring the achievement of GES on marine waters, and coordination with coastal zone management	EC | KN	C | Protection and conservation	●●●	C.1.4
M9	Put in place a monitoring program on coastal dynamics to understand the evolution of the Portuguese shoreline, and establish guidelines for its use, in close coordination with the National Strategy for Integrated Coastal Zone Management. SEA: Promotes integrated management between maritime spaces and coastal areas thus allowing for ecosystem preservation. Aims at developing monitoring programs, thus contributing to the development of protection mechanisms and allowing marine ecosystems preservation	KN	C | Prevention and mitigation	●●●	C.2.1
M10	Put in place both a research program and a monitoring program on the influence of geodynamic cycles and climate change in maritime spaces (their resources and activities), to understand physicochemical processes, predict their effects and identify ways to prevent/minimize them, and consider adaptation models for existing/future activities. SEA: Aims at developing monitoring programs, thus contributing to the development of protection mechanisms and allowing marine ecosystems preservation	KN	C | Prevention and mitigation	●●●	C.2.2

(continues)

Code	Measure (description and SEA analysis)	Sustainability Dimension	Strategic domain | strategic guideline	Time frame S,M,L	Original code
M11	Develop specific regulations and Environmental Impact Assessment models for maritime spaces, to prevent/minimize the risk of environmental impacts (individual or cumulative) occurrence from maritime activities. SEA: Promotes GES on marine ecosystems, by ensuring the assessment of environmental impacts and verifying if they are within levels compatible with good environmental quality	EC	C | Prevention and mitigation	●○○	C.2.3
M12	Put in place a national plan to shelter vessels in difficulties, in order to reduce vulnerability associated to shipping accidents. SEA: Not available	EC | SUS	C | Prevention and mitigation	●●○	C.2.4
M13	Develop studies to allow for economic valuation of marine biodiversity and services provided by marine ecosystems, promoting the development of sustainable economic activities, identifying criteria for investment in nature conservation/environmental quality, and contributing to improve local populations socioeconomic conditions. SEA: Aims at developing studies on marine ecosystems and biodiversity, thus promoting their sustainable use. Assumes an ecosystem-based approach, establishing criteria for investing in nature conservation, economic valuation and sustainable use of marine resources.	EC | SUS | KN	C | Valuation	●●○	C.3.1
M14	Develop management plans for marine protected areas that include: the economic value of marine ecosystems and services (rather than conservation costs only); and the identification/promotion of sustainable economic activities that may contribute to proper and integrated management. SEA: Concerns the establishment of protected areas and management plans, thus ensuring the achievement of GES on marine waters, and coordination with coastal zone management. Assumes an ecosystem-based approach, identifying ecosystem services and their economic value, and promoting sustainable economic activities	EC | SUS	C | Valuation	●●○	C.3.2
M15	Anticipate programs for comprehensive surveys on offshore geological resources – especially mineral resources that are scarce/inexistent onshore. SEA: Contributes to attain knowledge and promotes information sharing. Allows for the evaluation of ecosystem services capacity, promoting increased knowledge on natural values for all users of maritime space.	KN	D | Capacity building	●●●	D.1.2
M16	Ensure the development of studies required to achieve a GES in line with MSFD's objectives, and promote their inclusion in a framework for adaptive management of maritime spaces. SEA: Not available	EC | KN	D | Capacity building	●●○	D.1.3
M17	**Stimulate/ensure financial support to research and development programs – on ocean technology, robotics and biotechnology, together with risk analysis and climate change – promoting the inclusion of research centres, institutions and economic agents into international networks of excellence. SEA: Allows for the fulfilment of knowledge gaps on natural resources, in line with an ecosystem-based approach, and protection of socio-ecological systems	KN	D | Research and development	○●●	D.2.1
M18	Develop programs for research and data collection on Portuguese sedimentary basins (especially located deep offshore) in order to increase knowledge on their oil potential. SEA: Allows for the fulfilment of knowledge gaps on natural resources, in line with an ecosystem-based approach, and protection of socio-ecological systems	KN	D | Research and development	○●●	D.2.2
M19	Develop knowledge centres and close connections between companies and research centres/other scientific institutions, and between private and public sectors from different areas of information associated to use-sectors. SEA: Promotes traditional knowledge as a way to use ecosystem services and promotes the appropriation of natural values by local communities and society. Consolidates this approach by enabling agents on how to develop sustainable activities	KN	D | Information	○●○	D.3.1
M20	Ensure the implementation and monitoring of the POEM, promoting a close coordination between maritime spaces and coastal areas (in a perspective of integrated planning/management), ensuring sustainable use of resources and sustainable economic activities, and promoting compliance with legal requirements related to private use of the maritime public domain. SEA: Supports stakeholder involvement in the process of implementing POEM, which allows for the development of protection mechanisms for marine ecosystems and services, and potential trade-offs	EC | SUS	E | Governance model	●●○	E.1.1
M21	**Ensure an effective articulation among different monitoring programs on the environmental quality of national waters, to be developed in the framework of the MSFD, WFD, Natura 2000 network, OSPAR Convention, etc. SEA: Supports co-responsibility of stakeholders in the implementation of decisions on nature conservation and management. Allows for a better management of natural resources and contributes to the achievement of GES in marine ecosystems	EC | KN	E | Governance model	●●●	E.1.4

Table S3.3. Recommendations from POEM's action program addressing environmental sustainability issues. Strategic domains and guidelines are according to Figure 3.4a. Strategic Environmental Assessment (SEA) analysis is presented according to information from Partidário et al. [87]. EC: Ecosystem conservation. SUS: Sustainable use of resources. KN: Knowledge gathering.

Code	Recommendation (description and SEA analysis)	Sustainability Dimension	Strategic domain | strategic guideline	Original code
R1	Promote actions to raise awareness on the environmental, economic and cultural value of the marine environment. SEA: Enhances and promotes the disclosure of existing natural resources.	EC | SUS | KN	A | Geostrategic space	R.A.1.1
R2	Promote sustainable fisheries through the application of programs to restructure and modernize fishing fleets. SEA: Promotes a sustainable valuation of natural resources (recognizing ecosystem services), and the improvement of environmental performance of maritime activities.	SUS	B | Economic valuation	R.B.1.1
R3	Minimize environmental impacts from aquaculture activities through the promotion of specific programs to support aquaculture development. SEA: Promotes the implementation of programs to support investments and improvements on fisheries and aquaculture products, allowing for food safety, minimization of environmental impacts and of energy consumption, thus strengthening socio-ecological systems.	SUS	B | Economic valuation	R.B.1.2
R4	Develop a program to support the upgrading of technologies and activities associated to shipbuilding and to the design/production of mechanical/electrical equipment and information systems, thus enabling the national contribution to fulfil the needs of several maritime activities (e.g. installation/maintenance of energy production units, platforms for oil exploration, aquaculture production units), and other maritime activities such as environmental protection and scientific research. SEA: Promotes a sustainable valuation of natural resources, and the improvement of environmental performance of maritime activities.	EC | SUS	B | Synergies	R.B.2.2
R5	Promote the valuation of fisheries/aquaculture products through the use of certification programs, including certification of sustainable seafood products and sustainable fisheries. SEA: Promotes sharing of knowledge, and enhances data access and expansion of know-how. Promotes a sustainable valuation of natural resources, and the improvement of environmental performance of maritime activities.	SUS	B | Trade-offs	R.B.3.1
R6	Develop management plans for marine ecosystems to ensure protection and conservation of resources most vulnerable to human exploitation. SEA: Promotes the development of protection mechanisms thus allowing for marine ecosystems preservation. Promotes a sustainable valuation of natural resources, and the improvement of environmental performance of maritime activities.	EC	C | Protection and conservation	R.C.1.1
R7	Develop 'good practice' guidelines on ecosystem conservation for each sector of maritime activity. SEA: Promotes a sustainable valuation of natural resources, and the improvement of environmental performance of maritime activities.	EC | SUS | KN	C | Prevention and mitigation	R.C.2.1
R8	Promote the development of studies to increase the knowledge on the conservation status of marine species/habitats, as well as on the impacts of some maritime activities. SEA: Allows for the fulfilment of knowledge gaps on natural resources, in line with an ecosystem-based approach, and protection of socio-ecological systems. Promotes a sustainable valuation of natural resources, and the improvement of environmental performance of maritime activities.	EC | KN	D | Information	R.D.3.1
R9	Create a program that allows for the coordination among different institutions studying the sea, and the development of a database (Information System for the Sea) to manage scattered marine information and to enable data sharing and data availability to a broad set of agents. SEA: Promotes sharing of knowledge, and enhances data access and expansion of know-how.	KN	D | Information	R.D.3.2
R10	Grant entities dealing with the maritime space with proper human, technological and financial resources, particularly in functions related to monitoring and implementation of the present Action Program. SEA: Ensures monitoring of processes that are key for ecosystem preservation. Concerns the establishment of protected areas and management plans, thus ensuring the achievement of GES on marine waters, and coordination with coastal zone management.	EC | SUS | KN	E | Governance model	R.E.1.1
R11	Encourage the production of energy without greenhouse gas emissions in line with the Kyoto Protocol commitments. SEA: Not available.	SUS	E | Governance model	R.E.1.3
R12	Ensure that maritime surveillance and law enforcement measures minimize the likelihood of environmental threats. SEA: Not available.	EC	E | Intern., sovereignty and security	R.E.2.1

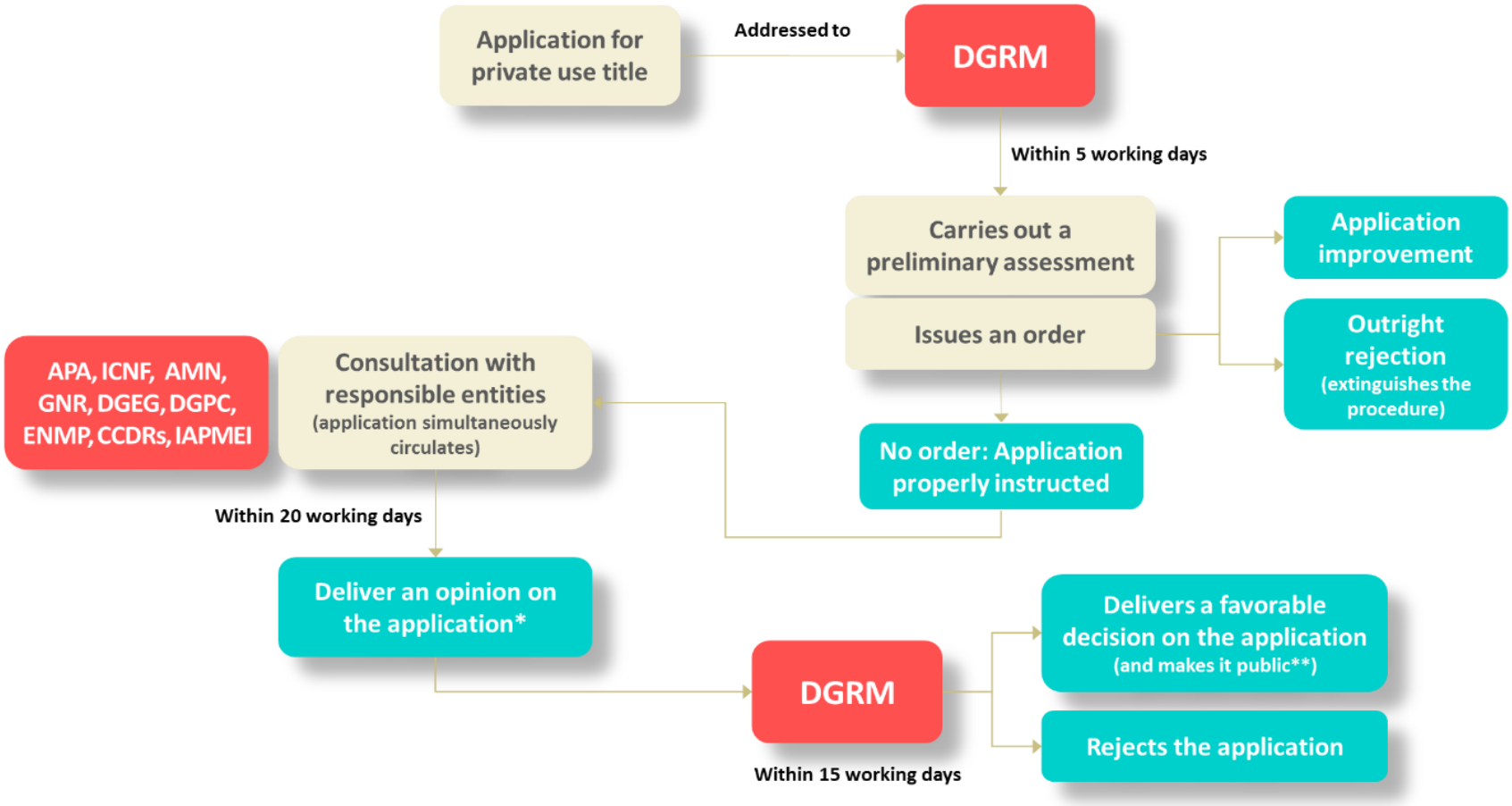

Figure S4.1. General application procedure for the issuing of a private use title according to the Portuguese marine spatial planning complementary legislation [30]. Applications for private use titles for aquaculture in transitional waters follow a different procedure (they are under the responsibility of the Portuguese Environment Agency, depend on prior approval of an Allocation Plan, and procedures for the issuing of such titles have to be articulated with DGRM as the coordinating entity). DGRM: Directorate-General for Natural Resources, Safety and Maritime Services. APA: Portuguese Environment Agency. ICNF: Institute for Nature Conservation and Forests. AMN: National Maritime Authority. GNR: National Republican Guard. DGEG: Directorate-General for Energy and Geology. DGPC: Directorate-General for Cultural Heritage. ENMP: National Entity for the Fuel Market. CCDR: Commissions of Coordination and Regional Development. IAPMEI: Agency for Competitiveness and Innovation. (*) Pronounce themselves exclusively on matters concerning their respective duties and powers. (**) Thus opening the possibility for other interested parties to require the issuance of the same title, or to object to the title attribution

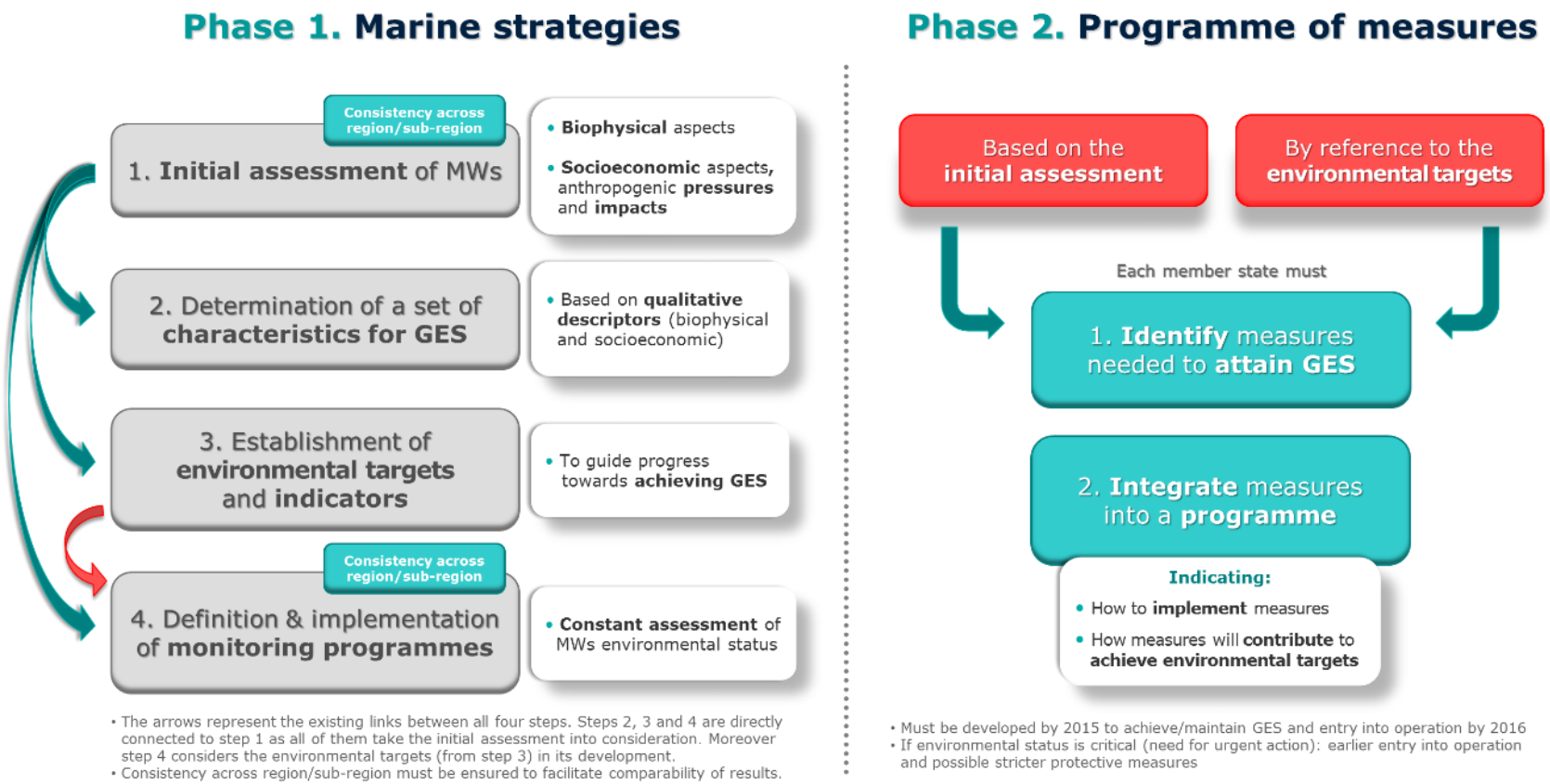

Figure S4.2. Plan of action of the Marine Strategy Framework Directive [41]. It begins with the development and implementation of Marine Strategies (phase 1) followed by the development of a Programme of Measures for such strategies (phase 2). MWs: Marine waters. GES: Good environmental status.

Figure S4.3. Portuguese public entities that must provide relevant information and data to the Portuguese Directorate-General for Natural Resources, Safety and Maritime Services (DGRM) according to their field of expertise (blue boxes), in the scope of the Marine Strategy Framework Directive implementation [100]. EEA: European Environment Agency. M@rBis: Marine Biodiversity Information System. MONIZEE: Integrated System of Environmental Monitoring within the Portuguese Exclusive Economic Zone.

Table S5.1. Semi-Structured Interview for the Portuguese MSP case study. Much of the data collected in Chapter 4 came from a series of in-person, semi-structured interviews with participants in the Portuguese MSP process. The interview script is shown below. Because the original script was written in Portuguese, this is a translation by the author.

Interview Script
Opening
Thank you very much for meeting with me. As I mentioned when I contacted you, I am a graduate student at the Faculty of Sciences, University of Lisbon. As part of my Ph.D. research project, I am interested in learning more about the Portuguese marine spatial planning (MSP) process. Approximately 40 key actors will be included in the study. This involves a c. 30 minutes interview. Your participation is voluntary and your answers will never be linked to you. I would like your permission to record our conversation. This helps me to pay closer attention and remember what we said later. Of course, you can decline to answer any question if you are not comfortable. Do you have any concerns or questions before we start? If you have further questions about the project you may contact me at cfsantos@fc.ul.pt or my advisors, Dr. Francisco Andrade (faandrade@fc.ul.pt) and Dr. Michael Orbach (mko@duke.edu).
[At the beginning, the interviewer will note the occupation and affiliation of the respondent, the role played in the Portuguese marine planning process, and the period of involvement. This information will not be asked directly during the interview as it is already known. Questions in italics are to be included according to the respondent's role in the process]
Questions
Origins
1.a. What triggered the development of MSP in Portugal?
1.b. What are the main benefits and constrains of MSP in general?
The POEM
2.a. What are the main benefits or advantages of the POEM?
2.b. What are the main disadvantages or limitations of the POEM?
2.c. What were the main challenges of participating in the POEM? [if participant]
2.d. What would you change in the process? [if participant]
2.e. Do you think the POEM was subject to a proper participation process? [if the answer is *no*] Who was missing?
2. f. Why was the POEM developed as a plan but published as a study?
2.g. What do you feel about POEM being published as a study? [if participant]
The MSP framework law
3.a. What are the main benefits or advantages of the MSP framework law?
3.b. What are the main disadvantages or limitations of the MSP framework law?
3.c. What were the main challenges of developing/discussing the law? [if law developer/member of 7-CAM]
3.d. What would you change in the process, if anything? [if law developer/member of 7-CAM]
3.e. Do you think the law was subject to a proper participation process? [if the answer is *no*] Who was missing?
3.f. What will be the link between the POEM and the MSP framework law?
Environmental concerns
4.a. What is the importance of the environment for MSP? [environment as the baseline vs. a sector]
4.b. What is your opinion on the ecosystem-based approach? [theoretical concept vs. practical approach]
4.c. In your opinion, how is environmental sustainability considered in the POEM? [properly vs. poorly]
4.d. How is environmental sustainability considered in the MSP framework law? [properly vs. poorly]
Future
5.a. What will be the future major challenges in implementing MSP in Portugal?
Close
Is there anything else you would like to comment on, or do you have any questions for me? Besides listed participants who would you recommend me to interview [snowball sampling]? Please contact me if you have additional thoughts or questions. Thank you for your time.

Table S5.2. List of entities that were part of the POEM multidisciplinary team. Adapted from a document presented at the 11th multidisciplinary team meeting of the POEM.

Before the 2011 government change

CIAM	**POEM's MT**
Ministry of the Environment and Land-use Planning	· Portuguese Water Institute – INAG (coordination) · Institute for Nature Conservation and Biodiversity – ICNB · Portuguese Environment Agency – APA
Ministry of Agriculture, Rural Development and Fisheries	Directorate General for Fisheries and Aquaculture – DGPA
Ministry for Public Works, Transport and Communications	Institute for Ports and Maritime Transport – IPTM
Presidency of the Council of Ministers	Portuguese Institute for Sports – IDP
Ministry of Culture	Institute for the Management of Architectural and Archaeological Heritage – IGESPAR
Ministry of National Defence	· Office of the Secretary of State for National Defence and Maritime Affairs · Portuguese Task Group for Maritime Affairs – EMAM · Portuguese Task Group for the Continental Shelf Extension – EMEPC
Ministry of Internal Affairs	National Republican Guard – GNR
Ministry of the Economy and Innovation	· *Turismo de Portugal*, I.P. · Directorate-General for Energy and Geology – DGEG
Ministry for Science, Technology and Higher Education	Centre for Marine and Environmental Research – CIMA

Other entities

Regional Directorate for Maritime Affairs (Regional Government of the Azores) – DRAM
Regional Directorate for the Environment and Natural Resources (Regional Government of Madeira) – SRA

After the 2011 government change

CIAM	**POEM's MT**
Ministry for Agriculture, Sea, Environment and Spatial Planning	· Directorate-General for Maritime Policy – DGPM (coordination) · Institute for Nature Conservation and Forests – ICNF · Portuguese Environment Agency – APA, I.P. · Directorate-General for Natural Resources, Safety and Maritime Services – DGRM · Portuguese Task Group for the Continental Shelf Extension – EMEPC
Presidency of the Council of Ministers	· Portuguese Institute for Sports and Youth – IPDJ · Directorate-General for Cultural Heritage – DGPC
Ministry of National Defence	· Office of the Secretary of State for National Defence
Ministry of Internal Affairs	· National Republican Guard – GNR
Ministry of the Economy and Employment	· Directorate-General for Energy and Geology – DGEG · *Turismo de Portugal*, I.P. · Institute of Mobility and Transports – IMT, I.P.
Ministry for Education and Science	Centre for Marine and Environmental Research – CIMA

Other entities

Regional Directorate for Maritime Affairs (Regional Government of the Azores) – DRAM
Regional Directorate for the Environment and Natural Resources (Regional Government of Madeira) – SRA

Table S5.3. Parliamentary hearings on the discussion of Law Proposal No. 133/XII [36]. Hearings were scheduled during 2013 by the Agriculture and Sea Committee, Working Group for Marine Planning and Management – GT-EBOGEMN, to further discuss the proposal in detail [121, 142, 143].

Hearing	Consulted entity/individual	Date	Audio file
1	CRUP – Council of Deans of Portuguese Universities	Jul 02	Yes
2	CNADS – National Council for Environment and Sustainable Development (represented by Mário Ruivo, José Guerreiro, Emanuel Gonçalves, and Maria Adília Lopes)	Jul 09	Yes
3	Permanent Forum for Sea Affairs (represented by Maria José Abreu and Carlos Sousa Reis)	Jul 09	Yes
4	António Domingos Abreu – President of the Portuguese Chamber of Biologists	Jul 09	Yes
5	FEEM – Portuguese Business Forum for the Sea Economy (represented by Fernando Ribeiro e Castro)	Oct 08	Yes
6	Fernando Barriga – retired Full Professor from Faculty of Sciences, University of Lisbon [a]	Oct 16	Yes
7	Emanuel Gonçalves – Professor from ISPA–Instituto Superior de Psicologia Aplicada	Oct 16	Yes
8	José Guerreiro – Professor from Faculty of Sciences, University of Lisbon	Oct 16	Yes
9	Federation of Unions of the Fisheries Sector	Oct 23	Yes
10	Fisheries Association Movement	Oct 23	Yes
11	Mútua dos Pescadores [b]	Oct 23	Yes
12	QUERCUS – National Association for Nature Conservation	Nov 13	Yes
13	LPN – Portuguese League for Nature Protection	Nov 13	Yes
14	SPEA – Portuguese Society for the Study of Birds	Nov 13	Yes
15	João Guerreiro – Rector of the University of Algarve	Nov 29	No
16	Álvaro Garrido – Director of the Ílhavo Maritime Museum, Professor from University of Coimbra	Nov 29	No
17	Miguel Marques – Responsible for HELM, PwC Economy of the Sea Barometer	Nov 29	No
18	Maria João Bebiano – Full Professor from the University of Algarve)	Nov 29	No
19	Miguel Galvão Teles – Partner of Morais Leitão, Galvão Teles, Soares da Silva & Associados law firm	Dec 06	Yes
20	Jaime Braga – Portuguese Business Confederation	Dec 06	Yes
21	Miguel Cunha – Testa & Cunhas Fishing and Aquaculture	Dec 06	Yes
22	Tiago Pitta e Cunha – Consultant to the Portuguese President on Science, Environment and Maritime Affairs	Dec 10	Yes
23	Manuel Pinto Ribeiro – Finisterra - Consultoria e Projectos, S.A.	Dec 10	Yes
24	João Poças Esteves – Partner of SaeR–Sociedade de Avaliação Estratégica e Risco, Lda.	Dec 10	Yes
25	BCSD Portugal – Portuguese Business Council for Sustainable Development (represented by Mafalda Evangelista) [c]	Dec 19	Yes

(a) Initially scheduled for October 15, 2013.

(b) Association of fisherman.

(c) Regina Salvador (Full Professor from New University of Lisbon) was also scheduled but did not attend the hearing.

Table S5.4. Meetings of the Agriculture and Sea Committee's Working Group on Marine Planning and Management (GT-EBOGEMN) [121].

	Date	Event	Description
2013	19 Jun	GT-EBOGEMN meeting – No. 1	Not available.
	26 Jun	GT-EBOGEMN meeting – No. 2	Evaluation of parliamentary hearings' scheduling.
	2 Jul	GT-EBOGEMN meeting – No. 3	Hearing No. 1 (Council of Deans of Portuguese Universities).
	9 Jul	GT-EBOGEMN meeting – No. 4	Hearings No. 2 (National Council for Environment and Sustainable Development), No. 3 (Permanent Forum for Sea Affairs), and No. 4 (Portuguese Chamber of Biologists).
	8 Oct	GT-EBOGEMN meeting – No. 5	Hearing No. 5 (Portuguese Business Forum for the Sea Economy).
	15 Oct	GT-EBOGEMN meeting – No. 6	Hearing No. 6 was scheduled but did not occur.
	16 Oct	GT-EBOGEMN meeting – No. 7	Hearings No. 6 (Prof. Fernando Barriga), No. 7 (Prof. Emanuel Gonçalves), and No. 8 (Prof. José Guerreiro).
	23 Oct	GT-EBOGEMN meeting – No. 8	Hearings No. 9 (Federation of Unions of the Fisheries Sector), No. 10 (Fisheries Association Movement), and No. 11 (Mútua dos Pescadores [a]).
	13 Nov	GT-EBOGEMN meeting – No. 9	Hearings No. 12 (National Association for Nature Conservation), No. 13 (Portuguese League for Nature Protection), and No. 14 (Portuguese Society for the Study of Birds).
	29 Nov	GT-EBOGEMN meeting – No. 10	Hearings No. 15 (Prof. João Guerreiro), No. 16 (Prof. Álvaro Garrido), No. 17 (Dr. Miguel Marques), and No. 18 (Prof. Maria João Bebiano).
	06 Dec	GT-EBOGEMN meeting – No. 11	Hearings No. 19 (Dr. Miguel Galvão Teles), No. 20 (Eng. Jaime Braga), and No. 21 (Eng. Miguel Cunha).
	10 Dec	GT-EBOGEMN meeting – No. 12	Hearings No. 22 (Dr. Tiago Pitta e Cunha), No. 23 (Dr. Manuel Pinto Ribeiro), and No. 24 (Dr. João Poças Esteves).
	19 Dec	GT-EBOGEMN meeting – No. 13	Hearing No. 25 (Portuguese Business Council for Sustainable Development).
2014	07 Jan	GT-EBOGEMN meeting – No. 14	State of play and scheduling.
	15 Jan	GT-EBOGEMN meeting – No. 15	State of play and deadlines.
	17 Jan	GT-EBOGEMN meeting – No. 16	State of play and deadlines.
	31 Jan	GT-EBOGEMN meeting – No. 17	Evaluation of amendments to Law Proposal 133/XII presented by parliamentary groups.
	04 Feb	GT-EBOGEMN meeting – No. 18	Proposal's amendments are analysed and voted.
	07 Feb	GT-EBOGEMN meeting – No. 19	Appreciation of the GT-EBOGEMN final report.

(a) Association of fisherman.

Table S5.5. Additional strengths of the POEM, which were identified by only one or two informants. The number of informants that identified each strength is presented in "total count".

Additional strengths	Total count
Fosters the use of the ocean	1
Positive impact close to private sector (investors)	1
Not published as a Plan	1
Developed in due time	1
Promoted a communication between private sector and the government	1
Good conceptual framework	1
Fostered discussions on the Portuguese legal framework for MSP	1
Properly identifies integration with terrestrial spatial planning instruments	1
Allows for 3D/4D planning	1
Allowed entities to understand 3D/4D planning was possible	1
Participants learned on the role of the environment (baseline for MSP)	1
Opportunity to analyse how to develop ocean uses in a sustainable, ecosystem-based, and adaptive way	1
Good leadership (INAG's president)	1
Encompassed dynamic GIS platform for MSP	1
Good level of detail (not excessive) that allows adaptation more easily	1
Strategic vision for the Portuguese sea	2
Allowed some simplification of procedures (Simplex)	2
Identified data gaps	1

Table S5.6. Additional weaknesses of the POEM, which were identified by only one or two informants. The number of informants that identified each weakness is presented in "total count".

Additional weaknesses	Total count
Developed under terrestrial planning framework	1
No political strength to gather financial support to be implemented	1
Change of actors within MT at a late stage of the process	1
Climate change not properly addressed	1
No legal expertise within the MT	2
Not dynamic (to allow new uses)	1
Information on spatialization cannot be officially used (e.g. in POOCs)	1
No public access to raw data (only PDF maps)	1
No transboundary consultation with Spain	1
Inappropriate model to identifying conflicts	1
No simplification of institutional arrangements	1
No clear definition of responsibilities	1
Fisheries adopted a wrong attitude (losing)	1
Inadequate participation of ICNB (did not answer economic surveys)	1
No 3D/4D planning (required an extra effort)	1
Merely an academic exercise	1
No detailed study for coastal areas (next step)	1
Recommendations for stakeholders insufficiently detailed	1
High expectations to solve all problems	1
Risk of losing developed work	1
Risk from losing a collective sense (gathered among participants)	2
Economic-based approach	2
Inappropriate Strategic Environmental Assessment	2
Information is outdated	2
Maximalist vision of some sectors (fisheries, energy, tourism)	2
Areas for fisheries not defined (entire space)	2
Areas for tourism not defined (entire space)	1
Risk from including the continental shelf beyond 200 nm (not yet approved)	1
Uses inappropriate baseline for the Portuguese maritime space (maximum spring high water tide mark)	1
No outreach chapter (regarding public participation)	1

Table S5.7. Additional strengths of the MSP framework law, which were identified by only one or two informants. The number of informants that identified each weakness is presented in "total count". NOS: National Ocean Strategy.

Additional strengths	Total count
Allocation plans are to be automatically integrated in Situation Plans	1
Allocation plans are subject to environmental assessment	1
Politically supported (comes from top – government)	1
Participation of interested parties in MSP to be ensured	1
Builds on the POEM	1
Represents a step forward in Portuguese MSP	1
Integrated vision for the Portuguese maritime space	1
Strategic vision (by identifying the NOS as the strategic policy instrument for MSP)	1
Good set of principles	2
Timeline for concessions reduced from a maximum of 75 years to 50 years	1
Includes monitoring and evaluation of MSP	2
Creates a system for all entities to provide opinions on MSP	1

Table S5.8. Additional weaknesses of the MSP framework law, which were identified by only one or two informants. The number of informants that identified each weakness is presented in "total count".

Additional weaknesses	Total count
Risk from including the continental shelf beyond 200 nm (not yet approved)	1
Lack of consistency between principles and preference criteria for prevailing uses (regarding importance of marine environment)	1
Risk from having excessive simplification of procedures	1
Does not specify if private use titles are withdrawn if title holder does not use space	1
Does not establish entities with responsibility over MSP	1
Does not identify revenues for the Portuguese State	1
Does not specify any financial instruments for MSP policies	1
Does not establish if existing uses are to prevail over future uses	1
Risk from changing current functional institutional procedures (by establishing new responsible entities)	1
Not subject to environmental assessment	1
Does not specify instruments for environmental assessment	1
Does not address transboundary issues	1
Does not directly encompass the polluter-pays principle (only via the Environment Framework Law principles)	1
Lack of focus on Integrated Management	1
Does not say that plans and use titles are subject to monitoring	1
Lack of understanding at intra-government meetings (among Secretary of State offices)	1
Uses an inappropriate baseline (low water tide mark)	2
Not stated that extended continental shelf only includes seabed and subsoil	2
Developed in inappropriate time frame (too short)	2
Does not specify to whom the increased value reverts (i.e. State)	2
Risk of being thrown away by the next government	2
No revision or adaptation mechanisms for the law itself	2
No mechanisms for adaptive management of MSP instruments	1
Law developers lacked expertise to deal with multidisciplinary required by sea affairs	1

Table S5.9. Additional future challenges for Portuguese MSP, which were identified by only one or two informants. The number of informants that identified each weakness is presented in "total count".

Additional future challenges	Total count
Zoning the sea	2
Use of genetic resources	2
Safeguard the national interest	2
Ensure a monitoring system for MSP (environment, pressures, safety)	1
Developing indicators (for monitoring)	1
Ensure transparency	1
Managing a "common" (i.e. the Portuguese maritime space)	1
Defining priorities for MSP	1
Ensure capability to manage a MSP plan	1
Establish a strategy for the future (political goals)	1
Improve connection between scientific research and business companies (research that supports business development)	2